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CONTENTS.

	Page
The Significance of Sleep Disorders. By HUGH H. CARLETON, M.D., M.R.C.P.	173
The Borderland between Surgery and Gynæcology. By E. W. HEY GROVES, M.S., F.R.C.S.	185
Anæsthetics. By STUART V. STOCK, M.B., B.S., F.R.C.S.	197
The Association between Angioma of the Cerebellum, Polycystic Pancreas and Renal Adenoma (Lindau's Syndrome). By GEOFFREY HADFIELD, M.D., M.R.C.P.	211
Senile Arterial Changes in a Child aged Seven Weeks. By F. W. TERRELL HUGHES, M.B., Ch.B., and C. BRUCE PERRY, M.D., M.R.C.P.	219
Reviews of Books	223
Editorial Notes	231
Obituary: CHARLES ALEXANDER MORTON	238
The Medical Library of the University of Bristol	240
Local Medical Notes	241

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The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me Scire alius sciret."

AUTUMN, 1929.

THE SIGNIFICANCE OF SLEEP DISORDERS.*

BY

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THE purpose of this paper is an attempt to discover whether there are any distinctions whereby the various factors in sleep and insomnia may be distinguished; and if such distinctions can be established, to consider their bearing on treatment.

Whatever views we may hold about sleep, we shall probably all agree that it is signalized by a transient cessation of consciousness, an essentially cortical phenomenon; but we have to consider how far normal sleep is purely cortical and how far it is also related to changes at subcortical levels.

There is some reason for the belief that certain regions of the brain may be called subcortical sleep

* A Paper read at a Meeting of the Bristol Medico-Chirurgical Society held at the University of Bristol on 10th April, 1929.

centres. These sleep centres are situated on pathways afferent from the muscles and vegetative nervous system to the regions of the brain situated around the third ventricle and hypothalamus, and thence relayed to the highest neurological levels in the cerebral cortex. The tendency to sleep is facilitated, or the reverse, by this incoming stream of messages or excitations, from the vegetative nervous system, mediated through the hypothalamus.

It appears necessary to postulate the existence of neural tone as an essential factor in the facilitation or prevention of sleep. Our own subjective sensations harmonize with such a view. Temperamental differences suggest, not only that neural tone exists, but that it is set at varying levels in different individuals and in the same individuals at different times. It is intimately related to physical states, as determined by muscle sense, and the effect of endocrine influence on bodily functions, also on the balance struck by the regulating activities of the vegetative nervous system.

Temperamental differences express themselves in the varying degrees of response manifested by different people. The speed and strength of irradiation of impulses through the association fibres of the cerebral cortex is, so to speak, a touchstone for estimating nervous tone or temperament.

The state of neural tone determines our feeling of well-being, and is itself mainly determined by muscle and visceral sensations and the inherent quality of our brain stuff. When our internal machinery is running smoothly, beyond a general feeling of well-being we are unconscious of our bodily sensations. On the contrary, in the presence of disease affecting viscera, of endocrine disturbance, or in the face of muscular discomfort, the feeling of well-being is upset. A stream

of noxious impulses arises, which reaches, in the first place, the subcortical vegetative centres. This unfavourable stimulation of subcortical centres causes an upset of neural tone, and prevents the development of inhibitory states in the cortex, which normally result in sleep.

Normal sleep can be accounted for by cortical changes alone, provided neural tone remains constant for the time being, that is to say, provided no profound disturbances in the muscular and vegetative fields arise.

It is not easy to give a completely satisfactory definition of normal sleep, but for practical purposes it may be described as "a temporary cessation of consciousness occurring as a result of fatigue, monotony or habit."

The study of sleep under exact experimental conditions by Pavlov,[1] in his work on conditioned reflexes, has thrown considerable light on the fundamental processes underlying normal sleep. Pavlov's researches may be summarized thus: He set out to make a purely objective study of the activities of the cerebral cortex. Working with dogs, the method was to establish a large variety of conditioned reflexes, *i.e.* to obtain measured responses to accurately-controlled stimuli or signals. For the establishment of conditioned reflexes an intact cerebral cortex is essential. In the earlier stages of training precise, delicately-adjusted responses were readily obtained. When the duration of the experiments was prolonged, so that the element of fatigue was introduced, or the conditions savoured of monotony, or on the presentation of signals habitually associated with tiredness or boredom, the animals quickly passed into a state of internal inhibition or refractoriness,

indistinguishable from sleep. Pavlov came to the conclusion that this state of internal inhibition was a purely cortical phenomenon, and was identical with normal sleep.

By the phrase "internal inhibition" Pavlov obviously means a negative state or cessation of neural activity; in other words, a resting phase. This use of the term inhibition needs to be distinguished from the function of inhibitory control, an important physiological principle, underlying the evolutionary development of the nervous system, the latter being regarded as built up of superimposed levels, each higher level exerting inhibitory control over levels of lower physiological grade.

Let us consider internal inhibition, and see if the seat of the inhibitory state can be more closely defined. A brief survey of the structure of the cerebral cortex will be helpful. Schematically, we may think of the cortex as composed of arches, each consisting of an afferent and an efferent column, the interval between the two being spanned by association neurones, in the main made up of enormous numbers of closely-packed granular cells, which, with their axones, are confined to the grey matter and contribute to the laminated appearance seen in sections of the cortex.

Speaking generally, and omitting detail, one may distinguish two types of cortex, first motor, and secondly receptive cortex. Function and structure are closely correlated. The motor cortex is characterized by a wealth of pyramidal cells, and the sensory or receptive cortex by a concentration of closely-packed granular cells.[2] There is general agreement that the granular receptive cortex is concerned with the analysis of sense impressions, that it has the power to store and liberate nervous energy in accordance

with physiological need, and is, in fact, the physiological basis of mind, memory, and consciousness. With the active phase of the granular cortex we associate the attributes of consciousness, and with the resting phase the cessation of consciousness or sleep.

Association between various areas of the cortex is established on the efferent side by axones, which have their cell stations in the small pyramidal cells of the third layer of the cortex; but these cells are only activated by impulses from the granular layer, and it is the latter which determines activity or inhibition in the cortex as a whole.

The detailed study of the behaviour of this felt-work of association neurones formed a large part of Pavlov's research. It is essentially in relation to the organs of special sense that sensory [3] cortical areas are developed, and the arrangement within the cortex is such that we may speak of visual, auditory, olfactory, and tactile analysers. Experimental results show that these cortical analysers become blocked and display the phenomenon of internal inhibition as a result of fatigue, monotony or habit, and if this process of inhibition becomes widely spread sleep ensues.

This, briefly, is a description of normal sleep. In it no account is taken of the state of neural tone, already referred to, which is largely determined by the stream of impulses afferent from muscles and the vegetative nervous sytem to certain subcortical centres. The relation of these subcortical regions to the process of sleep must now be considered. It must be remembered, however, that while it may be convenient to speak of subcortical sleep centres, the latter act ultimately through the medium of the cerebral cortex, since sleep, without loss of consciousness, is inconceivable.

Experimental and clinical data indicate that sleep centres are situated at the base of the brain, in those regions which form the boundaries of the third ventricle, more particularly its floor and posterior wall, also, notably, in and around the region of the hypothalamus, parts of the brain which are to be regarded physiologically as the head end of the vegetative nervous system, and the head station for proprioceptive impressions from muscles. Clinical evidence as to the existence of subcortical sleep centres comes from three main sources :—

(1) Cerebral tumours, situated in and around the third ventricle and verified post-mortem : cases in which, during life, pathological somnolence was a prominent symptom.

(2) Observations on the narcolepsies, notably by Kinnier Wilson [4] and Adie. [5]

(3) Observations on encephalitis lethargica.

The observations on tumours in the region of the third ventricle are to be found in the reports of collected cases of Cushing, Righetti[6] and of Purves Stewart,[7] and are convincing.

For the detailed clinical evidence afforded by the narcolepsies the writings of Wilson[4] and Adie[5] in *Brain* should be consulted. In narcolepsy, side by side with the phenomenon of pathological sleep, there occurs a concurrent syndrome, cataplexy, in which the patient, under the influence of emotion, exhibits complete loss of postural tone. He may, for instance, on the exhibition of strong emotion, laughter or anger, fall to the ground all of a heap. Cataplexy is a typical third ventricular syndrome, and, as we have seen from the above, is also associated with pathological sleep. It supports the view that sleep centres are situated in

this region of the brain. The post-encephalitic state is well known. In this condition we have a third ventricle syndrome, namely, altered postural tone, which, together with disorder of sleep, points to the existence of sleep-regulating centres in and around the third ventricle.

Experimental evidence as to the existence of subcortical sleep centres comes from two main sources, the work of Dubois[8] as far back as 1896, and more recently the work of Cushing and Goetsche.[9] The work consists of experimental ablations in the region of the hypophysis cerebri and third ventricle. These observers were led to the conclusion that the third ventricular region of the brain plays a predominant role in the mechanism of sleep. Further, there is no doubt as to the close relationship of this region of the brain to the vegetative nervous system.

We are forced, then, to the following general conclusions, namely, that disordered muscular sensation, visceral disturbances, functional or organic, painful visceral disease, *e.g.* angina or peritonitis, or endocrine dysfunction, *e.g.* exophthalmic goitre, may act as excitants of the vegetative subcortical sleep centres. The latter, in turn, transmit a noxious, afferent stream of impulses to the cortex, which disturbs neural tone. In consequence the normal development of internal inhibition in response to fatigue, monotony or habit is prevented, and insomnia results.

We now come to the clinical application of the above views. In the treatment of patients can we recognize disorders of sleep which correspond to types based on the foregoing considerations ? In the first place, can we recognize minor disorders of sleep, beginning and ending with disturbances at the cortical level ? Secondly, do the more profound forms of

insomnia indicate disorders of muscle sense or disturbance of the vegetative nervous system, which act first on subcortical sleep centres and through them secondarily on the cerebral cortex ?

Assuming that we find such clinical evidence, what implications follow with regard to treatment ? We are all familiar with delayed or disturbed sleep, which may follow some unusual excitement, and the inability to sleep in unusual surroundings. Such minor disturbances are not associated with any physical discomfort or ill-health, and almost any of the milder sedatives are sufficient to ensure sleep. It is a question of promoting the normal tendency of the cortex to develop inhibition. Likewise, we are all familiar with states associated with disordered visceral or endocrine function, cases which are frequently termed anxiety neuroses. Patients belonging to this category frequently complain of obstinate insomnia ; their rest at night is upset by palpitation, indigestion, and general disturbances of their sense of physical well-being. Usually insomnia of this type may be corrected by moderate doses of the milder hypnotics and other general medical treatment.

A drug in common use, the action of which is interesting and merits consideration, is aspirin. Given at night, it frequently acts as a sedative and mild hypnotic ; yet many people take aspirin in the daytime without finding the slightest tendency to somnolence, such as may, for instance, be produced by the bromides. The explanation probably lies in the fact that aspirin has a selective effect in diminishing muscular sensibility. In general *malaise* and muscular rheumatism there is a greatly heightened sense of muscular discomfort, which means that a stream of noxious impulses pours in to the hypothalamus by

proprioceptive pathways. The result is subcortical interference with sleep. Aspirin, by diminishing this stream, allows normal cortical inhibition to proceed, without itself acting directly at cortical levels. Such a view would explain the inefficacy of aspirin to cause somnolence when taken in the daytime.

When we pass to a consideration of serious mental disorders the problem becomes more difficult. Intractable insomnia ushers in the periodic breakdowns of manic-depressive psychosis in the majority of cases. Apart from the patients in this class, who become frankly insane, there is a still larger number who suffer from severe periodic depression, and the latter is often associated with disorder of physical sensations. In the frankly psychotic such disordered sensation often forms the basis of somatic delusions. Anyone who sees a large number of cases of manic-depressive psychosis must be impressed with the view that the condition has a definite organic basis of physical ill-health, and treatment, to be successful, must be directed towards the correction of the latter.

Psychotherapy appears to be a pure waste of time with these patients, whereas treatment directed towards improvement of their physical condition, whether it be the elimination of sepsis, restoration of endocrine balance or the cure of visceral disease, is not infrequently followed by a marked improvement in the mental state. Since severe insomnia usually ushers in the attack, the symptom calls urgently for treatment at an early stage of the breakdown. It will be found in many cases that the heaviest doses of bromide, chloral, and one of the veronal derivatives are required in order to produce sleep. By such methods some improvement is occasionally obtained. On the other hand, more frequently, after two or three weeks'

artificially-induced sleep, with heavy doses of drugs, the condition of the patient appears in no way improved. Somatic delusions and feelings of general physical and mental distress remain unchanged.

This failure of treatment may be accounted for to some extent if we remember that the drugs mentioned —bromides, chloral, veronal, and the like—act essentially at the cortical level, whereas in the type of case under consideration the primary disturbance of health would appear to be deep-seated, and to act through the vegetative nervous system on subcortical centres. Are there any drugs at our disposal which are more likely to meet the requirements, which, in fact, will produce their sedative effect at these lower levels? Obviously there are such drugs, notably opium and hyoscine taken by the mouth, and belladonna. In the writer's experience these drugs have certainly proved more useful than any others in the treatment of manic-depressive psychosis, particularly if used in conjunction with small doses of bromide. The use of opium by mouth in the form of Dover's powder is free from objection in the treatment of insomnia in such cases, and the same applies to hyoscine, the latter notably in the post-encephalitic state, which is so frequently associated with great muscular discomfort. The results of the diseases in question are infinitely more disastrous to the patient than the very slight risk of inducing an opium or hyoscine habit. Belladonna has had a reputation in the treatment of manic-depressive psychoses for many years, though the reason for its utility has probably not been fully appreciated.

Without doubt endocrine disturbances promote a number of the psychoses. In spite of our increased knowledge of endocrine balance, we are still faced with

considerable difficulty in the efficient administration of glandular extracts. In a number of the emotional states associated with mental disorder we are able to surmise the probable over-action of the thyroid and suprarenals, which furnish two important katabolic hormones. Have we any means of counteracting this over-activity ?

Experience in recent times indicates that perhaps our chief anabolic hormone is insulin. There is evidence that insulin is of real service in treatment, particularly the pre- and post-operative treatment of Graves's disease. It is also the physiological antidote to adrenalin. It is put forward as a suggestion that the administration of glucose and insulin may find a useful place in the treatment of mania and other states of grave mental agitation and anxiety. To sum up the problem of insomnia in manic-depressive psychoses : treatment, to be effective, must aim at the correction of any organic physical disturbance of the patient's vegetative life. If material improvement is to be achieved, drugs which act at the vegetative level play a more important part than those which act solely on the cerebral cortex.

A few words must be said on the rationale of treatment of painful medical and surgical diseases in which sleep is prevented by reason of physical pain. It is a matter of common knowledge that occasional acute mental breakdown ushered in by insomnia follows major abdominal operations, and that mental disorder is not infrequently associated with the graver forms of heart disease. There can be little doubt that opium, or its allies, should be the sheet-anchor in most of these cases.

In conclusion, when we are called upon to treat insomnia, it is important to consider carefully whether

the symptom is simply the result of some minor disturbance of the three factors, fatigue, monotony or habit, which determine the development of normal sleep, in which case cortical levels alone are involved ; or whether there is a more profound disturbance arising in the fields of the vegetative nervous system which, in the first place, acts on the subcortical sleep centres, and only secondarily on the highest cortical levels.

BIBLIOGRAPHY.

[1] Pavlov, *Conditioned Reflexes*, Oxford University Press, 1927.

[2] Berry, *Brain and Mind*, Macmillan, 1928.

[3] von Economo, *The Cytoarchitectonics of the Human Cerebral Cortex*, Oxford University Press, 1929.

[4] Kinnier Wilson, " The Narcolepsies," *Brain*, 1928, li. 63.

[5] Adie, " Idiopathic Narcolepsy," *Brain*, 1926, p. 257.

[6] Righetti, " Contributo clinico e anatoma-patologico allo studio dei gliomi cerebrali," *Riv. Pat. Neur. e Ment.*, 1903.

[7] Purves Stewart, *Intracranial Tumours*, Oxford University Press, 1927.

[8] Dubois, " Étude sur le mécanisme de la thermogénèse et du sommeil chez les mammifère," *Ann. Univ. de Lyon*, 1896, p. 175.

[9] Cushing and Goetsche, " Hibernation and the Pituitary Body," *Journ. Exper. Med.*, 1915, xxii. 25.

THE BORDERLAND BETWEEN SURGERY AND GYNÆCOLOGY.

BY

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ONE of the great difficulties and dangers of the formation of any speciality in medical science is that of leaving some gap or territory between the domain cut off and the mainland from which it has been separated. Of no speciality is this more true than of gynæcology, which was the first dependency of general surgery to receive independent status.

One of the most important borderland territories between surgery and gynæcology relates to the surgery and mechanism of the female pelvis and the pain which is referred to the back, sacrum and buttocks. The operative radical treatment of flat pelvis ought to be studied by the surgeon and the accoucheur together, so as to devise, if possible, some alternative for the plan of Cæsarean section, followed by sterilization, which now holds the field.

Minor ailments which account for wrecked health and happiness in the lives of many women are the painful affections of the pelvis and its contents, the nature and treatment of which is often a matter of doubt.

For many years pain low in the back has been supposed to be due in women to uterine disorders or displacements.

Matthews Duncan invented the term "sacrache" to describe the low back pain of the sacrum in women, who often had a retroverted uterus or prolapsed ovary. But now it is generally admitted that this idea of mere uterine displacement having any serious effect is incorrect. The X-rays have demonstrated one of three lesions in nearly all the sufferers from "sacrache." These lesions are:—

1. A slipping downwards and forwards of the lumbar spine on the sacrum.

2. Some affection, sprain or arthritis of the sacro-iliac joints.

3. Some abnormal condition in the joints between the fifth lumbar vertebra and the sacrum, the common manifestation of which is an abnormal articulation of the transverse processes of the lumbar vertebra with the sacrum—the so-called sacralization of the fifth lumbar vertebra.

But it would be just as unreasonable to assume that the low back pain in women is always due to abnormalities of the lumbro-sacral spine and sacro-iliac joints as was the old assumption that it was always due to disease or displacement of the uterus and its appendages. Clearly, in these matters, either the surgeon must invade the gynæcologist's territory, or the gynæcologist the surgeon's; or—what is far more likely to advance knowledge and avoid error—the surgeon and gynæcologist must work together in territory which is their common borderland.

It is not my intention to make any further general appeal for this co-ordination, but to content myself with the relation of three recent cases of exceptional interest which illustrate very forcibly the difficulties and dangers of this borderland work.

Case 1.—*Severe anæmia associated with uterine fibroids, but caused by a fibroid tumour of the duodenum.*

F., aged 42, a forewoman at a factory. For some years she has suffered from irregular attacks of abdominal pain and has gradually become pale and anæmic. Menstruation has been rather irregular, lasting three to five days, loss profuse, but not painful. Has also had piles of moderate degree of severity. The abdominal pain was chiefly in the epigastrium and seemed to be associated with a moderate functional dyspepsia. In May and again in June, 1928, she had felt faint and had then passed a large loose motion as black as tar. Seen in June, she was a well-built woman, intelligent and vivacious, very pale with blanched conjuctivæ. The blood showed a cell count typical of secondary anæmia. There was a swelling in the hypogastrium the size of a fœtal head, which vaginal examination proved to be a uterine fibroid. There were a few internal hæmorrhoids. At this moment, when the patient had been examined by Dr. Taylor, Professor Rayner and myself, the obvious facts were :—

1. A profound anæmia of a secondary type pointing to a loss of blood.

2. Uterine fibroids.

3. A moderate degree of hæmorrhoids. There was also the history of her becoming faint and passing loose tarry motions on two occasions. There were three possible sources of hemorrhage, viz. the uterus, the hæmorrhoids or some intestinal lesion such as a duodenal ulcer. We therefore kept her in bed for a month, and as a preliminary measure the piles were injected with 10 per cent. carbolic acid in glycerine.

At an operation on 8th July, 1928, by Professor Rayner and myself, the abdomen was opened by a mid-line incision below the umbilicus. The whole body of the uterus was enlarged by a fibroid mass about the size of a cocoanut, and there were several smaller fibroids invading the broad ligaments. The uterus, both tubes and one ovary were removed by a supra-vaginal hysterectomy. The appendix was found to be long, thickened and adherent and contained two concretions. It was removed, and at the moment it was thought possible that the inflammation of the appendix might have been the cause of the gastric or duodenal hemorrhage.

But on enlarging the incision upwards and examining the duodenum, the latter was found to be involved by a firm elastic swelling about the size of a walnut, situated on the

inferior wall of the first part of the gut. As the nature of the tumour was uncertain, and the possibility of its removal doubtful, a posterior gastro-enterostomy was done. The pylorus and first part of the duodenum, containing the tumour, were then lifted out of the wound and clamped off. A transverse incision was made across the duodenum over the middle of the tumour, through the serous and muscle coats. This allowed a firm fibroid tumour to be shelled out without injuring the mucous coat of the bowel. (Fig. 1.) The outer coats of the duodenum were sewn together by catgut. The abdomen was closed by two continuous catgut sutures for the deep and superficial sheaths of the rectus, silkworm gut for the skin and anterior rectus sheath and continuous catgut for the skin only. She made a good recovery after a rather stormy convalescence. She was very restless for forty-eight hours after the operation and burst open part of the wound, which had to be re-sutured. She left the Home four weeks after the operation, and by the early part of 1929 she was back at work, her general health being quite satisfactory. The pathologist reported that both the uterine and duodenal tumours were typical fibro-myomata of exactly similar structure.

This case illustrates the happy results that may be achieved by co-operation between the surgeon and the gynæcologist. If either of us had been working alone, the patient might have had only one lesion dealt with and a second operation at an early date would have been inevitable.

Case 2.—*Intestinal obstruction due to an endometrioma, growing in the wall of the pelvic colon.*

F., aged 33, unmarried. For two years she had been complaining of gradually increasing menstrual pain and marked constipation. The uterine pain was very severe on the third day of each period, and was accompanied by a sensation of bearing down in the rectum.

She was seen by Dr. Lily Baker (January, 1929), who found a mass in the rectovaginal septum and also "some curious polypoid growths" in the posterior vaginal fornix. These latter were removed and sent for section, as Dr. Lily Baker had already made a tentative diagnosis of endometrioma of the uterus invading the rectal wall.

The pathologist considered that the growths were simple

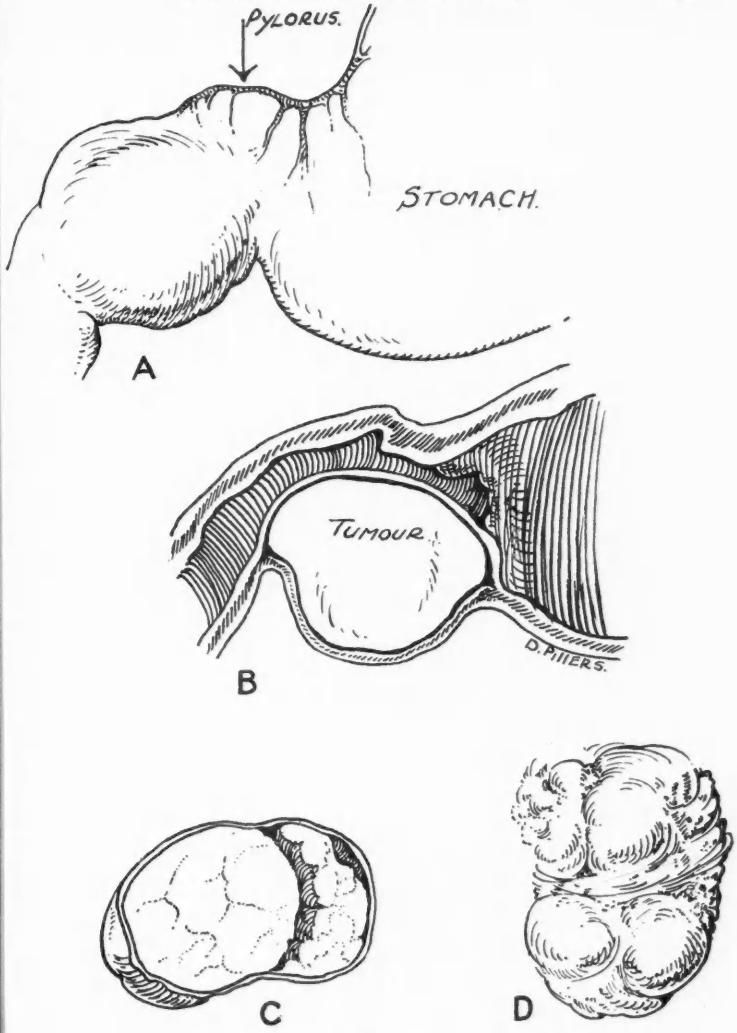

FIG. 1.

A Appearance of duodenum on exposure.
B Duodenum and pylorus in section. Tumour in situ.
C Tumour cut through centre.
D Tumour exactly as removed. Actual size.

papillomata, and showed no evidence of endometrioma or other malignant change. But her pain became more severe, and was now associated with the increasing constipation, as well as being worse than ever during the last days of each menstrual period.

At this time she came under my care, and she was subjected to careful X-ray examination after barium meals and enemas. This examination revealed nothing beyond very marked intestinal stasis, and she was sent back to her home for the time being. However, the pain, both intestinal and uterine, became steadily worse, so that the patient begged for some kind of operative relief. When undertaking this, I must admit that I regarded the case as one of abdominal neurasthenia, associated with intestinal stasis, and I undertook the laparotomy on the understanding that if no organic lesion was found, I would not do any excision or short circuiting of the colon. I very much regret that at that time I was not aware that Dr. Lily Baker had seen the case, so that I had not the advantage of her opinion as to the condition prior to the first operation.

The patient was a healthy woman, well nourished and of good colour, weighing 10 stone. The mouth was in good condition, some artificial teeth, chest normal, abdomen moved well, not distended, nothing abnormal discovered. Rectal examination revealed no stenosis, but a rather indefinite thickening opposite to and attached to the cervix uteri.

At an operation in June, 1928, through a right paramedian incision, the appendix was found to be long and narrow, but not inflamed or adherent ; the cæcum was rather dilated, as was the whole of the colon down to the pelvic portion. The sigmoid flexure of the colon, which could easily be brought up to the surface of the abdomen, showed what appeared to be a definite string carcinoma about eight inches above the pelvic floor, and one inch above the main growth was another small nodule, hard and puckered. On the pelvic floor itself (Fig. 2), in the recto-vaginal septum, was a hard mass which clearly represented an outgrowth from the cervix uteri into the rectal wall. The uterus, tubes and ovaries were otherwise normal. For the moment it seemed obvious that the patient had a growth obstructing the pelvic colon for which relief was demanded. But it was not clear whether the two growths in the colon were of the same nature as that in the recto-vaginal septum. I therefore contented myself with drawing a loop of the transverse colon out of the upper angle of the wound, the rest of which was closed. After three days the colon was opened and she made a

rapid recovery, expressing herself as entirely relieved from the general abdominal pain and from the constipation. However, on further reflection, I came to the conclusion that unless something further was done, she would have to keep the colostomy permanently, and that the growth in the pelvic colon, being probably a carcinoma, would eventually prove fatal.

At the second operation on August 9th the abdomen was opened through the old incision, and fortunately was found to be free from adhesions. Both ovaries and tubes were removed

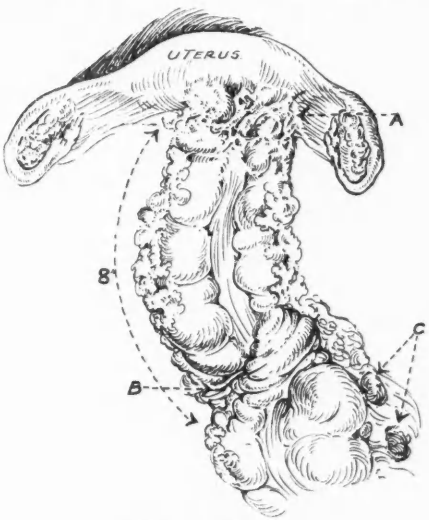

FIG. 2.

A Hard mass adherent to uterus.
B Constriction in pelvic colon.
C Nodulus secondary growth.

in order to cause involution of the endometrioma of the recto-vaginal septum. The pelvic colon was found to be exactly as in the first operation, viz. with one growth like a string carcinoma, producing great constriction and another nodule about one inch higher up. A piece of colon, six inches long, was excised, and an end-to-end anastomosis done by a double row of catgut sutures.

She made a very stormy recovery from this second operation, suffering from a succession of post-operative complications; first incessant vomiting, later severe foul-smelling diarrhœa

(through the colostomy) and then purulent bronchitis. Fortunately she recovered from all these, and in three months' time the transverse colostomy will be closed after testing the patency of the newly-restored pelvic colon. The specimen resected was very remarkable, and presented appearances which I have never seen before. Whilst from the outside it had a hard constricting growth and a small nodule one inch away, when it was cut open the mucous membrane was absolutely normal, without ulceration, inflammation or hemorrhage. On section it proved to be a typical "endometrioma," that is, an adenomyoma uteri in which islets of endometrial tissue are reproduced, surrounded by fibrous tissue which undergoes great contraction.

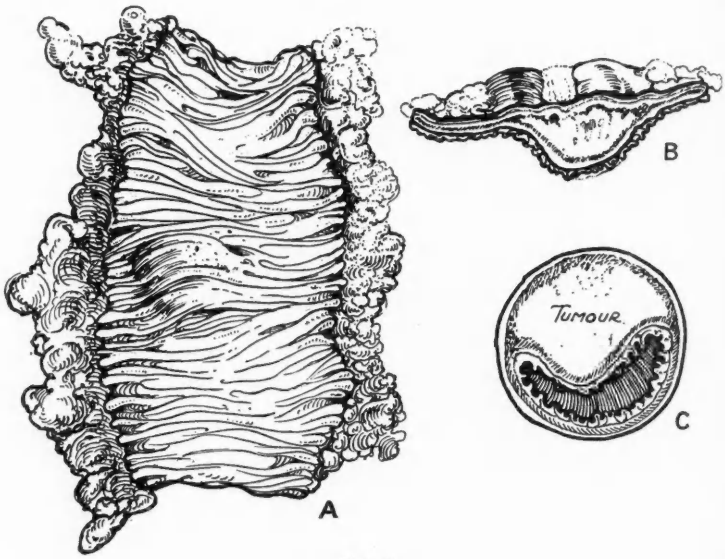

FIG. 3.

A Portion of pelvic colon opened after excision, showing mucous membrane intact over tumour.

B Section of the bowel cut through growth.

C Diagram to illustrate the actual relation of growth as a cause of obstruction.

It is true that the subject of endometrioma has had abundant discussion in gynæcological text-books and journals,[1, 2, 3] but it is not fully recognized in surgical

literature that it is capable of actually becoming implanted upon the intestine and forming there a constricting growth which causes intestinal obstruction. Mouat has, however, recorded two cases similar to the above.

It behaves in some respects like a malignant growth. Apparently, in the first place, a portion of endometrium by its own active proliferation invades the muscular wall of the uterus, and growing there in a centrifugal direction, finally bursts through the peritoneum, where it may form a growth like a soft adenomyoma ; or else it remains buried in the rectovaginal septum. But this does not exhaust the wandering characteristics of the new growth. It has the capacity of casting off buds from its own substance into the peritoneal cavity, and these buds may become implanted upon any pelvic structure as independent new growths. This migration of endometrial buds usually occurs as the growth is breaking through the outer wall of the uterus, but it has also been suggested that it may take place through the open ends of the Fallopian tubes. In support of this latter idea is the fact that endometrial growths are commonly found in the substance of the ovaries. In the case under discussion it is easy to imagine that the loop of pelvic colon lay on the floor of the pelvis, where it would be in contact with the growth which was extending from the cervix to the rectum. While it lay there some endometrial cells became implanted in its wall in two places and then began to proliferate, and to surround themselves with fibrous tissue which steadily tied a constricting cord round the gut. An endometrioma, though having these two characteristics, viz. penetration and implantation, does not otherwise resemble a carcinoma. It does not cause metastatic growths nor does it recur when locally removed. And lastly, it has

one unique characteristic related to its origin, and that is, that it withers and atrophies at the menopause or when the ovaries have been removed.

Case 3.—*Serious bone and joint injuries associated with difficult birth.*

My third borderland case is of quite a different kind, and deals with gross lesions suffered by an infant at birth.

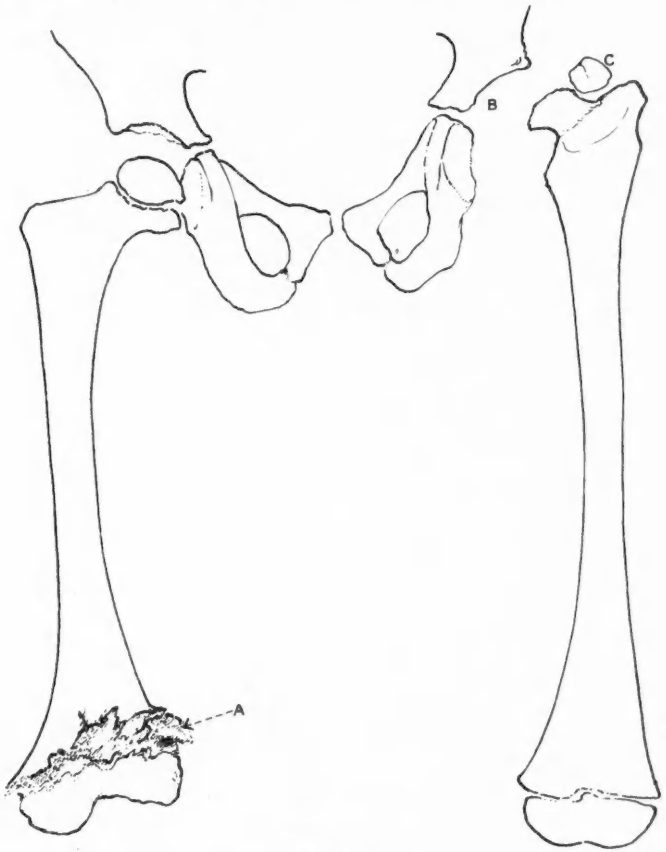

FIG. 4.

A Damaged epiphysis of right femur.
B Acetabulum on left side from which femur is dislocated.
C Separated epiphysis of left femur.

X.Y., a boy aged 4 years, was born at full term by a breech presentation. The labour was a very difficult one, and the child is said to have been assisted into the world by traction over the flexed thighs. It was very severely cut and bruised especially over the outer side of the right thigh. Was at first so frail that he was not expected to survive. He walked late and badly, and when he was four years of age he was brought to the Hospital on account of lameness and unsteadiness of gait. (Fig. 4.)

He is a well-nourished child of normal intelligence. He has the pot-bellied protuberant-buttock figure of a hip dislocation. He walks with a peculiar roll and waddle of so comic a character that it seemed almost a pity to correct it. The left leg, which appears to be longer than the right, has the trochanter on a level with the anterior superior spine, and the X-ray confirms the diagnosis of a dislocation of the hip with separation of the epiphysis. The right leg is deeply scarred on its outer aspect just above the knee, and these scars are said to be the remains of the birth trauma. The leg is nearly two inches shorter than its fellow, and is greatly deformed at the knee-joint by a genu valgum. The X-ray shows that the lower epiphyseal line of the femur is very irregular and suggests that it has been seriously damaged. The damage has already resulted in arresting the growth of the right leg and distorting the shape. As the genu valgum on the already short leg caused still greater apparent shortening when the child walked, owing to a tilting upwards of the pelvis on that side, the child was extraordinarily lame.

The genu valgum could easily be corrected, and this has now been done, so that one element in his lameness is removed. At a later date, probably in about one year's time, an osteotomy will be done below the trochanter on the left side, so as to bring the line of the femur more directly under the pelvis and at the same time shortening the leg.

There are many conditions of grave surgical importance in the newly-born child which are liable to be overlooked, because they do not interfere with the general nutrition. Of these the most important are injuries of the skull and membranes of the brain, causing intracranial hemorrhage and subsequent paralysis or mental deficiency; injuries of the brachial plexus causing paralysis of the arm; and injuries of the bone and joints, as in the case just related.

The progress of medical science has been such that the development of special departments, *e.g.* that of gynæcology, is necessary and inevitable. But with the separation of such special departments there should be an organized effort to link up the neighbouring territories of work, so that the gynæcologist shall be ready to help the surgeon and the surgeon the gynæcologist, rather than leaving a borderland between two sciences in which either worker alone may have to encounter unfamiliar dangers, where his colleague might render him invaluable assistance.

My thanks are due to Dr. Lily Baker for kindly placing her notes of Case 2 at my disposal when she became aware that the patient was under my care, to Professor Rayner for his invaluable help in Case 1, and to Miss D. Pillers for the diagrams which illustrate this paper.

REFERENCES.

[1] Mouat, "Two Cases of Stricture of the Bowel by misplaced Endometrial Tissue," *British Journal of Surgery*, 1926-27, vol. xiv., p. 76.

[2] Clifford Morson, "The Pathology and Treatment of a Vesical Tumour resembling an Endometrioma," *British Journal of Surgery*, 1927-28, vol. xv., p. 264.

[3] Fraser, *Bristol Med.-Chir. Jour.*, 1927, vol. xliv., p. 113.

ANÆSTHETICS.*

BY

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WITHOUT modern methods of asepsis, antisepsis and anæsthesia modern surgery would be impossible. This statement cannot be challenged, and so anæsthesia has assumed an importance formerly lacking.

That it is as yet far from perfect a glance at the following figures will show. These as nearly as possible express the present *immediate* mortality rate from the anæsthetics named:—

Chloroform.—1 in 2,000–3,000 cases.

Ether.—1 in 16,000.

Nitrous Oxide and Oxygen. — The immediate mortality in minor surgery is practically nil, but in major surgery it is about the same as in ether (1 in 16,000).

When analgesic methods are used, the only available figures are for spinal block; these vary enormously according to the method, the experience and veracity of the administrator.

I have analysed about 45,000 cases, and find that the mortality works out at 1 in 770 cases. This figure,

* A Paper read at a Meeting of the Bristol Medico-Chirurgical Society held at the University on 8th May, 1929.

which is rather appalling, included the stovaine deaths. Stovaine, like chloroform, should never be used. This is not the whole tale, because there are late effects producing fatalities which are not included above.

At the present time the anæsthetist holds a well-defined and I hope well-merited place in the surgical team as the surgeon's chief assistant, with definite duties and responsibilities, one of the most important being his examination of the patient, to estimate his fitness for operation and to choose the best method of anæsthetising him, both from his own and the surgeon's point of view. "Operation successful, result death," is a jibe that has often been hurled at surgical procedures in the past, and it behoves the anæsthetist to see that he does not contribute to this consummation.

It is useless to state that a patient is fit to take an anæsthetic and to leave the matter there; what is wanted is an estimate of the patient's fitness to stand an operation.

As the late S. R. Wilson[1] has pointed out, besides the ordinary examination of the heart, lungs and urine, the estimation of the blood-pressure affords the most valuable information in relation to operative prognosis. It enables one to determine the condition of the cardiac muscle and indicates the capacity of the patient to withstand hemorrhage, shock and surgical manipulation. It also modifies the choice of the anæsthetic. The factors required are the pulse-rate, the diastolic and systolic pressures and their difference, which is the pulse-pressure.

From these we get two formulæ, worked out by Moot and McKesson, which are called the *pressure ratio* and the *energy index*.

The pressure ratio $= \frac{\text{pulse-pressure}}{\text{diastolic pressure}} \times 100$. If the resulting percentage lies between 30 and 70, the case is considered a favourable one. It has been pointed out that in both aortic regurgitation and hyperpiesis the figure obtained by this formula lies outside the safe limit laid down, but that cases of this description take anæsthetics well. This I grant, but the indication we seek is the patient's capacity to stand hemorrhage, shock and surgical manipulation, not his ability to inhale safely a certain amount of anæsthetic. I have applied this test to every doubtful case handled during the last two years, and have been helped over and over again. It is not intended to imply that cases showing a percentage figure outside these safe limits will not stand a severe operation, but that they require very much greater care; and a more guarded operative prognosis must be given. Into this category fall our cases of hyperpiesis and aortic regurgitation.

The second of the above two formulæ, the "energy index," is obtained by adding the systolic pressure to the diastolic pressure and multiplying by the pulse-rate. In the resulting answer we ignore the hundreds, and take only the figure representing the thousands. This should lie between 12 and 18.

The following example will show what is meant:—

In a patient with systolic pressure of 120 and a diastolic of 80, and a pulse-rate of 72, the energy index is $(120 + 80) \times 72 = 14{,}400$. We disregard the 400 and take the figure 14. This, lying between our 12 and 18 limits, indicates that the case is a favourable one.

I have used this formula in a large number of cases,

but have never got the same help as from the " pressure ratio." Of this I can offer no explanation.

In operations of any magnitude it is of the utmost assistance to have a record of the blood-pressure at, say, 5 to 10 minutes' intervals, together with the pulse-rate. A rise in the pulse-rate always precedes a fall in the blood-pressure, while a drop in the systolic pressure accompanied by a *rise* in the diastolic pressure is a sign of grave omen necessitating prompt measures to restore the pressures to a more normal relationship. A very low systolic blood-pressure is of itself not necessarily fatal, as I have under spinal anæsthesia seen pressures of 75 and 80 m.m. of mercury without the patient showing much general change. In both cases the pressure quickly rises again to well above the 100 mark.

In preparing patients for operations there are several things to be kept in mind, but, as F. J. McCann has pointed out, the chief is to disturb the patient physically or mentally as little as possible. Every operation is an ordeal of greater or less severity, which may leave a lasting impression on its subject. The late Professor Michell Clarke told me he considered that after a big operation it took two years before a patient returned to the normal condition. Modern technique has shortened that time, but even now it is a matter of months rather than weeks before all trace of the ordeal is lost. In this connection too much importance cannot be ascribed to the work of Crile on the avoidance of psychic and traumatic shock.

Forty-eight hours in a nursing home or hospital before operation is essential if it can be managed. The patients always do better both at the time of

operation and afterwards. I have never yet met a sister or nurse of large experience who was not emphatic on this point.

The old ideas of starvation and purgation still linger. There is no worse preparation, and the enema before operation, unless specially indicated, should be abolished. Castor oil, if the patient is constipated, is all that is required. As McCann says: "To give a purgative the previous night to a woman about to undergo an abdominal operation, and to awaken her at 5 a.m. for an enema and a cup of tea when the operation is to be performed at 8.30 or 9 a.m., is a form of scientific cruelty which should be abolished."

It should never be forgotten that an enema may cause considerable shock and distress to the patient.

The patient should take his ordinary meals, up to and including lunch on the day before operation; after that, a light tea and an easily digestible supper of small dimensions is usually all the starvation required. Sleep the night before an operation is of the very greatest importance, and if there is any doubt about it an hypnotic should be given, but it must be adequate. My own preference is for bromidia.

In bad risk cases glucose before operation is a great help; it does not matter much how it is administered, though if possible I prefer to give it by mouth. A clever nurse with a little imagination will help one greatly in this respect.

In my opinion there is no evidence of the value of rectal salines before operation, except in special cases. If fluid is wanted let it be given by the mouth when the patient can take it.

In these bad risk cases I have been employing for some time now a pre- and post-operative treatment with ephedrine, which was first suggested to me by my colleague Dr. A. T. Todd, and it is no exaggeration to say that the results obtained have been remarkable. Shock has been abolished or so largely reduced as to be of little or no importance, but the technique must be strictly followed. It consists of giving the patient by mouth a mixture containing ephedrine gr. $\frac{1}{3}$, tincture of digitalis m. vii., and mist. calcii albuminat. $\overline{3}$i. The calcium albuminate takes some little time to prepare, and the pharmacist cannot produce it at once. Five doses of this are given at four-hourly intervals, the last dose an hour before operation. A similar number of doses is given after operation. If, owing to post-operative sickness, it cannot be given at first by the mouth, the ephedrine should be given hypodermically, *combined with caffein*, according to the following formula which we use at the Bristol Royal Infirmary :—

Ephedrine hydrochlor. gr. $\frac{1}{3}$; caffein, gr. 2; sodium salicylate, gr. 3; glycero-alcohol, min. 16.

Ephedrine should never be given by itself, for some people have an idiosyncrasy for this drug. It acts on the vasomotor nerves, and as its effect passes off, what may be called a negative phase sets in. The vessels dilate, the cardiac contractions become less forcible; at this point the vagus action on the heart seems to be stimulated, leading to slowing of the heart and circulatory collapse. Caffein will prevent this, as it carries the circulation over the negative phase. Digitalis and calcium have the same action, but the caffein was chosen as it could be given hypodermically.

Fortunately, these susceptible people are rare, but

I have seen two cases of circulatory collapse after operation in which ephedrine alone was used.

Only two minor drawbacks to this method of treatment have so far been noted. The first is that during operation a few patients have sweated rather profusely, so that to prevent chilling care must be taken to see that the patients are properly covered. The other is that after operation the excretion of urine may be diminished. This was only marked in one case, and stopping the mixture promptly restored the excretion to normal.

The number and strength of the doses given above should be considered as maximum. The larger amounts of ephedrine given by some of the American surgeons are neither advantageous nor desirable. Our aim should be to "prop up" the circulation to a point that will carry it through the strain of the operation with the minimum effective dose of the drug possible.

Before leaving this subject, I should like to express my indebtedness to Dr. Todd for the help and advice he has given me in the working out of the technique.

The preliminary medication of the patient has been much debated, but with inhalation anæsthetics atropine is essential. Introduced at first to prevent reflex cardiac inhibition through the vagus, it has now the definite object of controlling oral and bronchial secretion. The dose used varies. I prefer 1/75 grain three-quarters of an hour before operation in the case of adults. Children over twelve are given 1/100 grain, and below that age in proportion. Young children have it by mouth. The dose that will suit all cases does not exist, as the dose of atropine is an individual one.

As the preliminary use of morphia, omnopon and hyoscine modifies the usual signs of anæsthesia, special care is required when employing them. Of their advantage there is no question, but certain disadvantages have to be considered. They protect the patient to a large extent from psychic shock, diminish the amount of anæsthetic required, and in this way help to guard against traumatic shock. By cutting down reflex excitability they make it possible to anæsthetize for many operations with gas and oxygen, that would otherwise require the addition of ether.

Some anæsthetists use the morphia-hyoscine, others the omnopon-hyoscine combination. For uniformity of effect the ampoules of scopolamine-omnopon Roche I have found most reliable, given at least one hour before operation. Even two hours before will be found advantageous in some cases.

When either combination is used, the patient should be placed on the theatre trolley at the time of injection, and left quietly in a darkened room until the operation. Failure to observe this rule destroys half the advantages of the injection. The patient is on no account to walk to the theatre after either of the above drugs has been given.

The disadvantages are few but marked: dryness of the mouth before operation and in some cases increased vomiting after; increased rigidity of abdominal walls during operation has been claimed as due to the combination, and there is no doubt that in many inhalation cases the time of induction is prolonged.

During operation the effect of the morphia on the

respiratory centre may give rise to trouble unless care is taken, and on this account chloroform, except in very small quantities, should never be used.

Finally, hyoscine causes an increase of bleeding, owing to dilatation of the vessels ; so much so that for years I have given it up in operations on the throat and nose. Vomiting after either morphia or omnopon may be marked ; in my experience more so after omnopon than morphia. This is disappointing, and I have been at some pains to assure myself that my first impression was true, as the primary effects of the omnopon and hyoscine are so good. For the thirst water or lemonade should be given, unless the operation is on the stomach or duodenum. My patients get as much as they want, and I have never been sorry for giving it.

After these drugs the patient must be watched a little longer than usual.

Before considering the choice of a method for actually anæsthetizing the patient, let us face the fact that whatever anæsthetic or analgesic agent is used it is a potential poison, and that we as anæsthetists are potential poisoners. The idea that any anæsthetic agent is harmless is wrong ; none are, though some are more poisonous than others. From this it follows that our object should be to give as little of the drug as we can, always remembering that our anæsthesia or analgesia must be adequate. We must always recollect that adequate anæsthesia may be deep or light. No more pernicious doctrine exists in medicine than the teaching that a patient must be reduced to a certain depth of anæsthesia and kept there, irrespective of the surgical need of the moment. Neither is it right to say that

a semi-conscious patient is a suitable subject for an abdominal operation, and that the surgeon must learn to operate on lightly-anæsthetized subjects. Adequate anæsthesia gives us our desired effect with the least possible expenditure of anæsthetic, and is nicely adjusted to the needs of the moment, not to what was wanted five minutes ago or will be at some time ahead. Adequate anæsthesia is the best thing for the surgeon and therefore for the patient, always remembering that the anæsthetist is there to assist the surgeon, thus helping him in every possible way, unless he be of the variety who requires his patients so deeply under that they get to the fourth stage of anæsthesia. These profound anæsthesias, soaking the patient with ether, are chiefly responsible for the damage done by inhalation anæsthetics.

In choosing the actual method, what we have to consider is the patient, and not which drug shall be used. In doing so there are three factors to consider: psychic shock, traumatic shock, and the toxic effect of the anæsthetic. The majority of patients met with in this country ask: "Let me know nothing about it." This practically means an inhalation anæsthetic of some sort, and in choosing it there is one drug that should never be used now, *i.e.* pure chloroform. In my opinion chloroform alone should only be used for diathermy operations about the mouth, and even then a mixture of chloroform and ether can be used for the induction.

Another "don't" is, never give pure ether to a case of phthisis; the risk of causing an exacerbation of the condition is very great.

For the man who does not give many anæsthetics, and who wants a method that is generally applicable,

the light ether anæsthesia, which A. L. Flemming has done so much to popularize, cannot be beaten. A Shipway's apparatus should be used, with the tube leading from it not more than three feet long. The chloroform bottle, if it has one attached, is ignored. Anæsthesia is induced with the ordinary mask, and when the Shipway is turned on the least amount of ether effective is used. Outside the abdomen and the mouth, gas and oxygen, together with morphia and perhaps a very little ether, constitute an ideal anæsthetic, with one drawback, that it is the most difficult of all the anæsthetics to give.

For abdominal work I pin my faith at present to a combined method of local and general anæsthesia; an induction by a few drops of chloroform followed by ether, infiltration of the muscle of the abdominal wall, and of the mesentery of the organ or bowel to be operated on, followed by gas and oxygen for the operation itself. The peritoneum is closed under a little C.E. mixture followed by gas and oxygen. At the end the patient's lungs are thoroughly "washed out" with 5 per cent. carbon dioxide in oxygen.

As this paper deals rather with anæsthetics than analgesics, I will only add that if a regional anæsthetic is used, such as spinal, or some other nerve-blocking or local procedure, it is essential to see that the patient is rendered amnesic by morphia and hyoscine, gas and oxygen, or even a little ether, otherwise a condition of psychic shock may be produced that will have a lasting effect on the patient.

As to the actual administration of the drug itself, there are two golden rules to follow. The first is, maintain the air way. I believe that no case of death

under ether has been recorded where the asphyxial element was absent. Secondly, establish and maintain automatic respiration with the smallest amount of the anæsthetic possible, using the eye reflexes only when in doubt as to the depth of anæsthesia, *i.e.* the eye reflexes are to be a check on, and not a guide to, the depth of anæsthesia. The character of the respirations are the most delicate guide of all, and any time and trouble spent in mastering them will be repaid manifold.

Finally, a few remarks on post-anæsthetic toxæmias may not be out of place.

The late S. R. Wilson published a most excellent article[1] on these. They may occur after all general anæsthetics, even gas and oxygen, but most commonly and severely after chloroform, which has a definite action on the heart muscle, liver and kidneys, producing granular swelling and fatty degeneration.

There are three types of toxæmia, the cardiac, renal, and hepatic. The hepatic type is the commonly recognized variety. The renal type is usually transient, but in rare cases may pass into urinary suppression and uræmia. The cardiac type is most important, and explains many cases of death after operation, deaths which are usually ascribed to anything but their true cause, the anæsthetic.

Wilson pointed out that the symptoms are an acceleration of the pulse with more or less normal respiration, vomiting varying with the extent of the associated hepatic involvement, physical signs of cardiac dilatation and sudden or gradual heart failure. Thrombosis and embolism may occur as a result of the cardiac enfeeblement.

DISCUSSION.

DR. C. CORFIELD agreed that the fitness of a patient to stand the operation was the important point, rather than the fitness to stand the anæsthetic. On such a subject the anæsthetist was well qualified to express an opinion—he knew the surgeon and the proposed operation, and had accumulated a large experience on this very point, how operations affected patients. He wished to endorse what Mr. Stock had said as to the value of atropine, and liked a full dose, *e.g.* gr. 1/75 for an ordinary adult. Morphine he did not like; it lowered the blood-pressure.

DR. C. E. K. HERAPATH criticized the "pulse ratio and energy index method" of estimating the prognosis for anæsthesia, and gave examples of frequent heart lesions which did not at all form contra-indications, but which by that method would "bar" operations. He felt neurasthenics should avoid all but urgent operations. Some patients, he would point out, had an idiosyncrasy for atropine, the usual dose producing among other symptoms intense tachycardia. It was news to him that gas and oxygen could upset a patient—was the effect of a ketosis rather exerted on the medulla than on the heart?

DR. F. H. BODMAN said that he personally found it important to forbid smoking immediately before an operation. As a preliminary medication he preferred an injection of morphine with scopolamine. He had tried the "energy index" method but did not find it of value

DR. H. B. LOGAN spoke of the importance of fear before an anæsthetic, and especially fear of the

anæsthetic and fear that "they will start before I'm under." He employs a bromide and chloral mixture the night before the operation. He regularly uses hyoscine as a preliminary injection, but does not like morphine.

MR. L. E. CLAREMONT spoke of the distress sometimes seen with analgesia, and inquired whether it was psychological or possibly due to use of too much adrenaline.

DR. L. A. MOORE said he thought hyoscine increased the difficulties of induction, and had no compensatory advantages.

REFERENCE.

[1] S. R. Wilson, *British Journal of Anæsthesia*, 1925, Vol. iii., No. 2, p. 6; 1926, Vol. iii., No. 3, pp. 49, 126.

PLATE XVIII.

Polycystic Disease of Pancreas. (Four-fifths natural size.)

THE ASSOCIATION BETWEEN ANGIOMA OF THE CEREBELLUM, POLYCYSTIC PANCREAS AND RENAL ADENOMA (LINDAU'S SYNDROME)

BY

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INTRODUCTION.

"Certain maladies that are wholly preventable in the abstract are unavoidable in real deed; for though they may be thought of merely as occupational diseases, unfortunately the occupation is that of existing as a human creature."—PEYTON ROUS, Linacre Lecture, 1929.

THIS paper concerns the case of a middle-aged man who died from the pressure effects of a cystic tumour of the cerebellum, probably of congenital origin, who was also found to have a grossly cystic pancreas and an adenomatous tumour of the kidney of appreciable size. At the time of the discovery of these three strange developmental defects in the same individual their association was regarded as nothing more than a bizarre result of chance during the hazards of development, and it was not until enlightened by the distinguished pathologist of the National Hospital, Queen Square, Dr. J. G. Greenfield, that the recorder of this case became aware that these or similar combinations of developmental anomalies have been grouped together as a "syndrome," and that about forty cases have been recorded.

CASE REPORT.

The patient, a man of 42, was admitted to the General Hospital, Bristol, under the care of Dr. Carey F. Coombs, in the summer of 1927, and died a few weeks later. About a year before death he had a fall on the head followed by a period of unconsciousness and, on recovery from this, by giddiness which persisted and became steadily worse for eight months. Three months before death the giddiness began to be accompanied by tinnitus and was found to be intra-cranial in origin. About this time Mr. Chambers, of the Bristol Royal Infirmary, found the optic discs normal. Two months before death sugar was found in the urine, vertigo was continuous, and he began to suffer from frequent attacks of intense sub-occipital headache with vomiting and bradycardia. The attacks had a sudden onset, lasted a few minutes to half an hour, necessitated morphia for the pain and were accompanied by acute mental confusion. During the attack the pulse would fall to 40 per minute and semi-consciousness with incontinence develop. During two of the attacks lumbar puncture was performed, and from 15 to 20 c.c. of fluid removed under pressure. On each occasion the operation produced striking improvement in the pressure symptoms, consciousness being regained rapidly and the pulse and mental condition becoming normal in a few hours. About this time clinical examination revealed definite sub-occipital tenderness on the right side and brisk knee-jerks, greater in the left than the right, with patellar clonus. The plantar reflex was flexor except on one occasion one month before death, when it became extensor, just preceding and during an attack. There was fine nystagmus greater in the right than the left. The Wassermann reaction was positive (+++) in the blood but negative in the cerebro-spinal fluid.

A moderate and equal degree of bilateral papillœdema was found a month before death, but no other retinal abnormality noticed.

A glucose tolerance test, carried out by Dr. Herbert Rogers, gave the following result :—

	Urine Glucose.	Blood Glucose.
Fasting	Nil.	0·106%
½ hour after glucose	Nil.	0·193%
1 ,, ,, ,,	3·3%	0·137%
1½ ,, ,, ,,	—	0·068%
2 ,, ,, ,,	1·2%	0·056%

PLATE XIX.

FIG. 1.

Average structure of cystic part. Cysts empty, lined by simple flattened epithelium.

FIG. 2.

Shows development of cysts. To left and above, normal pancreatic acini: to right, groups of dilated and cystic acini.

POLYCYSTIC PANCREAS ASSOCIATED WITH CYSTIC TUMOUR OF CEREBELLUM AND "HYPERNEPHROMA."

PLATE XX.

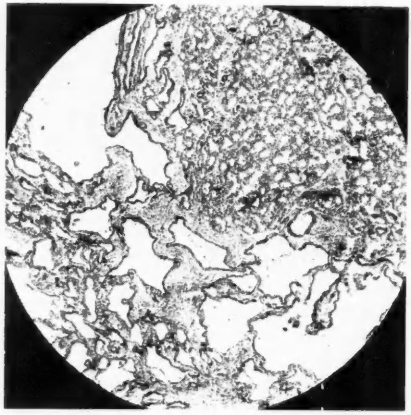


FIG. 3.

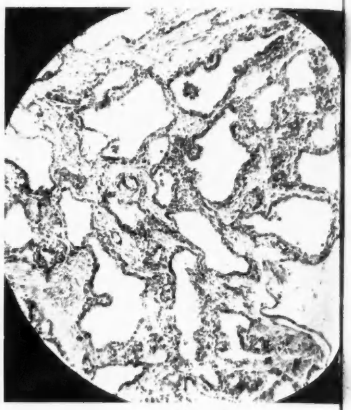


FIG. 4.

Shows transition from dilated acini to microscopic cysts.

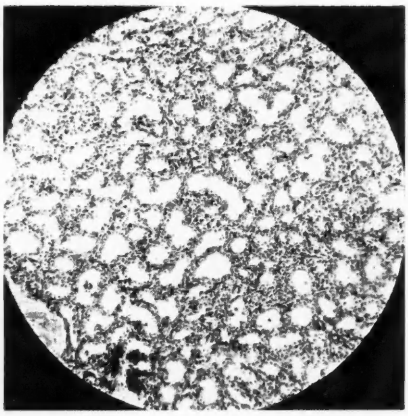
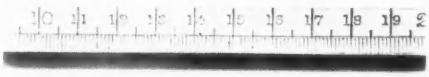


FIG. 5.

A field of dilated acini in pre-cystic stage.

POLYCYSTIC PANCREAS ASSOCIATED WITH CYSTIC TUMOUR OF CEREBELLUM AND "HYPERNEPHROMA."

PLATE XXI.



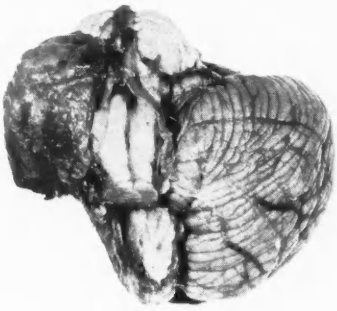


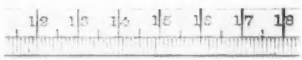
Fig. 6.
Cerebellum. (Half natural size.)

Fig. 7.
...er view showing cysts and pre-cystic stage.

Fig. 8.
High-power of 7.

CYSTIC TUMOUR OF CEREBELLUM ASSOCIATED WITH POLYCYSTIC PANCREAS AND "HYPERNEPHROMA."

PLATE XXII.



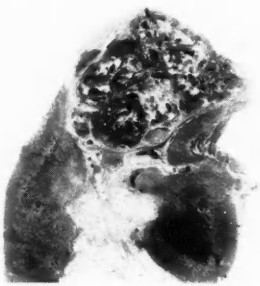


FIG. 1.

Renal tumour. (Half natural size.)

FIG. 2.

General low-power field. Closely-packed tubules lined by tall, clear cells.

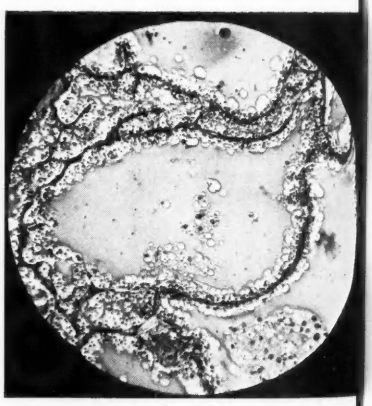


FIG. 2A.

High-power view of 2.

RENAL TUMOUR (CLEAR-CELLED ADENOMA) ASSOCIATED WITH POLYCYSTIC PANCREAS AND CYSTIC CEREBELLAR TUMOUR.

PLATE XXIII.

FIG. 3.

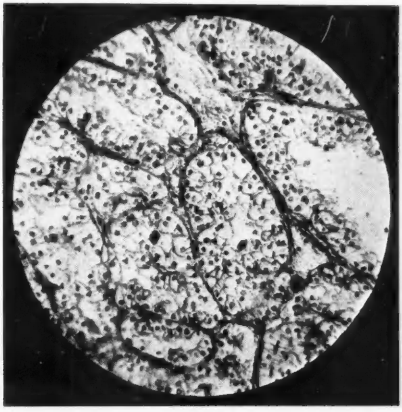


FIG. 5.

Tubules empty and small. Appearance recalls that of "hypernephroma."

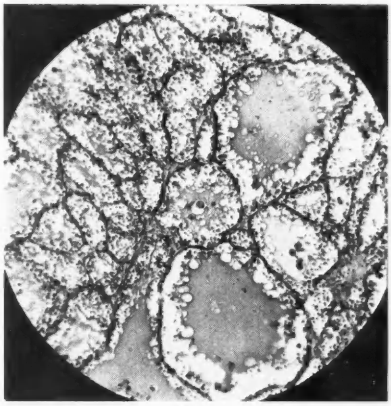


FIG. 4.

RENAL TUMOUR (CLEAR-CELLED ADENOMA) ASSOCIATED WITH POLYCYSTIC PANCREAS AND CYSTIC CEREBELLAR TUMOUR.

The inference drawn from this was that the glycosuria was probably pituitary in origin. The patient died a year after the onset of the illness during a period of unconsciousness with Cheyne-Stokes breathing, lumbar puncture on this occasion having no effect on the pressure symptoms.

ABSTRACT OF POST-MORTEM EXAMINATION.

Brain.—At least two-thirds of the mass of the right lateral lobe of the cerebellum was replaced by a large, thin-walled multilocular cystic mass filled with clear fluid, pushing the remnant of the lateral lobe downwards and forwards and apparently arising from a broad base of attachment in the middle lobe. The cyst was adherent but not infiltrating, and could be easily peeled off the subjacent cerebellum. After removing the brain the cyst collapsed, and it seemed that the development of the lateral lobe was imperfect and that the cyst had not destroyed it by infiltration or pressure, but was replacing an incompletely developed lateral lobe.

The photograph (Fig. 6) shows the appearance of the tumour after most of its contained fluid had drained away.

Microscopically, the tumour was composed of empty, endothelial-lined spaces varying in size from that of a blood capillary to large, irregularly-shaped cysts up to $\frac{3}{4}$ inch diameter. The intervening tissue was composed of branching neuroglial cells whose processes stained specifically by neuroglial stains. The blood-vessels in the stroma proper were thin-walled and rudimentary but relatively scanty.

Pancreas. — This was uniformly and grossly cystic throughout, and its naked-eye appearance immediately recalled that of congenital cystic kidney. The rough preservation of the normal shape and configuration gave the gland the appearance of a caricature of the normal pancreas. The surface cysts varied in size from $\frac{1}{4}$ to $1\frac{1}{4}$ inches in diameter, and on section the cystic change was uniform, even occasional dense, solid-looking areas being finely cystic to the naked eye. The main duct appeared to be a little smaller than normal, but showed no other change. It opened into a normal ampulla.

Microscopically, the walls of the larger cysts had fairly thick walls of mature fibrous tissue lined by simple flattened epithelium. The only normal pancreatic tissue was found in the form of compressed strands of varying thickness lying between the cysts, just as the functioning renal parenchyma lies between the cysts in a congenital cystic kidney. In this tissue cell-islets were numerous and concentrated, but irregular

in shape and larger than normal. The impression gained was that the functioning glandular tissue was considerably sub-normal in quantity even when the general enlargement of the organ was taken into account, but that the amount and development of the islet tissue was not greatly below the normal average.

An examination of the dense, solid-looking but finely-cystic masses, such as those seen in the head and tail of the organ in the photograph, showed this to be composed of glandular tissue in which the acini, not arranged in definite lobular form, were all irregularly dilated, and all transitions could be traced from this appearance to the formation of irregular microscopic cysts, and from this to the production of the simple cysts of naked-eye dimensions which studded the surface and cross-section of the gland.

Kidney.—Replacing the upper pole of the right kidney was a feebly-encapsulated tumour roughly spherical, about $1\frac{1}{4}$ inches in diameter and projecting only slightly from the surface. It was bright yellow in colour, splashed and dotted with hemorrhagic patches and had a clearly-seen alveolar pattern. Its naked-eye appearances were precisely those of a hypernephroma, except that gross hemorrhage, infiltration and the production of daughter foci were lacking. The suprarenal was normal.

Microscopically, the structure was definitely adenomatous: the gland tubules were lined by a single layer of strikingly clear, empty-looking, low columnar cells with simple, inactive nuclei. The tubules were unequally distended by a homogeneous colloid-like secretion obviously derived from the lining cells, the appearance recalling, apart from the clear cytoplasm of the lining cells, that of a thyroid gland in the stage of colloid storage. The larger individual tubules had exactly the structure of the small congenital cysts so often found in otherwise normal kidneys. The appearances clearly warranted a diagnosis of clear-celled adenoma of the kidney, in all probability of congenital origin, and of a similar nature to the common small solitary cysts often found in otherwise normal kidneys.

COMMENTARY ON CASE REPORT.

The dramatic amelioration of the symptoms of increased intra-cranial pressure following lumbar puncture made a striking impression on all who saw

the patient during life, and would appear to be due to relief of pressure due to rapid recurrent accumulation of fluid in the cystic cerebellar tumour. Why the cells composing what appears to be a congenital tumour should produce fluid at this rate for the last eight months of the patient's life is not clear, but it was probably due to some accident to its vascular supply.

The urgency of the pressure symptoms was probably due to the anatomical situation of the cyst. The abnormality in carbohydrate metabolism as revealed by the estimation of glucose tolerance was confidently taken as being part of the clinical picture of increased intra-cranial pressure and of pituitary origin, until the widespread cystic change in the pancreas was found, when it was justifiably concluded that the cystic pancreas must have had some share in the production of the glycosuria. The histological evidence, however, supports the clinical view, as the amount of islet tissue in the pancreas seemed adequate.

The clinically silent renal tumour is of interest in that it supports the modern contention that some, if not all, the Grawitzian tumours of the kidney are actually renal adenoma or adeno-carcinoma, and do not originate in adrenal rests. This yellow hypernephroma-like mass had no connection with the suprarenal, its tubules, allowing for the accident of retention of secretion, were comparable in structure with renal tubules segregated from their glomeruli, and its cells were loaded with yellow lipoid, giving the empty appearance in paraffin sections so typical of the classical Grawitz tumour.

The fascination of the case, however, lay in the

association in the same patient of three apparently unrelated pathological conditions, all of which were very probably of congenital origin, and one of which, the cystic pancreas, was excessively rare.

The following discussion is a résumé of the main facts known about this strange association.

DISCUSSION.

The case described falls into line with a group of cases discussed by Lindau of Lund[1] three years ago. Lindau's investigations were initiated by a careful examination of two cystic tumours of the cerebellum, which encouraged him to ransack many European museums for similar specimens. He discovered that cystic cerebellar tumours are not infrequently associated with angioma of the retina, of the medulla, spinal cord or cerebrum, sometimes with a polycystic pancreas and now and then with renal "hyper-nephromata" or renal cysts. All these conditions may be found in the same patient.

His figures are :—

Of all cerebellar tumours found 10 per cent. were cystic. 275 cases of cystic cerebellar tumour were collected, of which 235 were simple cysts of unknown pathology or gliomatous cysts ; 40 were capillary angiomata, and of these 15 showed angiomata in the retina, medulla, spinal cord or cerebrum, 8 had a polycystic pancreas, 10 had cysts of the kidney, and 8 had hyper-nephromata.

Other cases have been described by Schuback[3] and Schubert.[4]

Cushing and Bailey[6] find that tumours of angiomatous structure comprise about 2 per cent.

of all intracranial tumours. Of 29 tumours of this type, 16 were cerebellar angioblastomas. They fully confirm Lindau's findings.

The relation to angiomatosis of the retina is interesting, for the presence of this easily-observed sign during life may give the clue to the presence and nature of an intra-cranial growth which has a relatively good surgical prognosis.

In one case investigated by Lindau[1] eight years before death an eye had been excised for "arterio-venous aneurysm" of the retina. Re-examination showed this to be actually a retinal capillary angioma. Harvey Cushing and Bailey[2] report a case of angioma of the cerebellum operated on at Cushing's clinic in which retinal angiomatosis was found on re-examination, having been missed at the time of operation. The father and aunt of this patient had died of "ruptured cystic sarcoma of the brain."

Lindau finds that 20 per cent. of all cases of retinal angiomatosis collected have had intra-cranial complications.[1] The disease, also known as Hippel's disease, is often familial, is usually peripheral, but definite changes at the disc are described. Secondary changes obscuring the main lesion are frequent.

Parkes Weber[5] in a recent article draws attention to the occasional association of extensive hemangiomatous nævus of the skin with a similar nævoid condition of the cerebral meninges on the same side. In some of his cases there was also a congenital glaucoma. There seems to be no intermediate group between the Lindau syndrome and the cases described and collected by Parkes Weber, but the multiple congenital malformations have some similarity.

REFERENCES.

[1] Lindau, *Acta Path. Scand.*, Copenhagen, 1926, Supp. I.

[2] Cushing and Bailey, *Arch. of Ophthal.*, New York, 1928, lvii., 447.

[3] Schuback, *Zeitschr. f. d. ges Neurol. u. Psychiat.*, Berlin, 1927, cx. 359–371.

[4] Schubert, *Klin. Woch.*, Berlin, 1927, vi. 821.

[5] Parkes Weber, *Proc. Roy. Soc. Med.*, Sect. of Neurol., 1929, Vol xxii., No. 4, pp. 431–442.

[6] Cushing and Bailey, *Tumours Arising from the Blood Vessels of the Brain*, London, 1928.

SENILE ARTERIAL CHANGES IN A CHILD AGED SEVEN WEEKS.*

BY

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AND

C. BRUCE PERRY, M.D., M.R.C.P.†

THE following case of sudden death in a child is worthy of record in view of the curious pathological findings.

History.—The child, a girl aged seven weeks, was left for a few minutes in her perambulator in the care of her brother, while the mother prepared her feed for her. The brother called out that baby was "making a funny noise," and when the mother reached her she found her blue and obviously distressed. She picked her up and, thinking she "had the wind," turned her on to her face; the child, however, died almost immediately.

Post-mortem Examination.—A post-mortem examination was made by one of us (F. W. T. H.) at the coroner's request on the following day. The body was slightly cyanosed, but otherwise there was nothing abnormal externally. The only organ which presented an abnormal appearance was the heart. This, together with the thymus and lungs, was preserved for further examination.

The *heart* was normal in size, but attracted attention by the marked thickening and tortuosity of the coronary arteries, which stood out from the rest of the heart like cords. On opening the heart the only abnormality to be found was a valvular patency of the foramen ovale. All four valves were normal in appearance, as also were the aorta and pulmonary artery.

On microscopical examination the coronary arteries (see Figs. 2, 3) present an extraordinary picture. In all the main

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† Working under a Colston Research Scholarship.

branches the lumen is more or less obliterated by extreme intimal thickening. This intimal thickening is composed of a loosely-arranged fibrillar connective tissue. There is no evidence of vascularization. The media is almost completely calcified and only very broken fragments of muscle fibres are left. The adventitia shows some increase in its fibrous tissue. This change is confined to the larger branches of both coronary arteries, the smaller arteries being normal. Scattered throughout the myocardium are areas of early fibrosis replacing the muscle fibres. The thoracic aorta (Fig. 4) shows patches of intimal proliferation and thickening, but sections of the ascending aorta and the arch are normal. The pulmonary artery presents small areas of calcification in the media. These are distributed throughout the thickness of the media, but are perhaps more frequent in the inner third and just below the intima. The vessels of the adventitia and the vasa vasorum of the outer third of the media are congested. The intima is normal.

The *lungs* were normal in appearance and well expanded and ærated. On section some of the smaller branches of the pulmonary artery show small patches of subintimal calcification. The deposit of calcium almost appears to have occurred in the elastic laminæ, and in sections stained with orcein looks like normal elastic tissue, but with hæmatoxylin stains the deep blue black colour of calcium. (See Figs. 5, 6, 7.)

The *thymus* was normal in size and appearance. On section it shows no abnormality and the arteries are normal.

Family History.—There is no history of heart disease in the family. The father is aged 32 and healthy. Five years ago he developed a pneumococcal septicæmia following a quinsy, from which he made a good recovery. The mother is aged 31 and healthy—the Wassermann reaction is negative.

This was the third child. The two others are a boy aged 7 and a girl aged 5, both quite healthy. There have been no miscarriages. The pregnancy was normal, except that the mother had an attack of "influenza" at the sixth month. The labour was conducted by a midwife, and was normal. The child was breast fed till six weeks old, when, the breast milk failing, she was given a mixture of cow's milk and water. She had never been seen by a doctor.

Discussion.—There is no evidence in any of the tissues examined of an inflammatory origin of the changes, which appear to be the result of some toxic

PLATE XXIV.

FIG. 1.

General view of the heart, showing the thickened and tortuous coronary arteries.

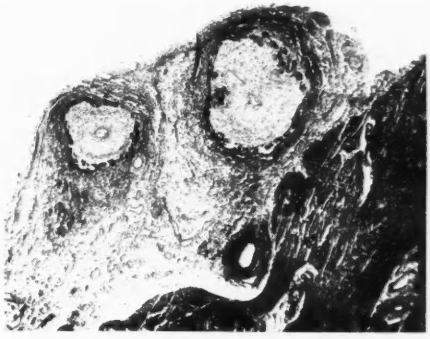

FIG. 2.

Photomicrograph showing two branches of the coronary artery in cross section. X 25.

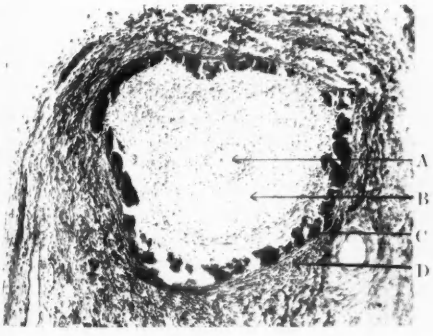

FIG. 3

Photomicrograph showing a higher power view of a coronary artery. X 25.

A The narrowed lumen.
B The thickened intima.
C The calcified media.
D The adventitial fibrosis.

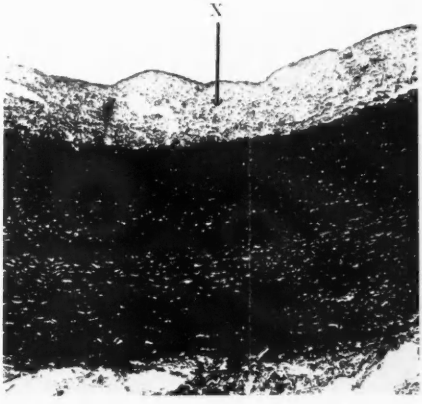

FIG. 4.

Photomicrograph of a section of the descending aorta stained with orcein, showing the intimal thickening (X). X 75.

PLATE XXV.

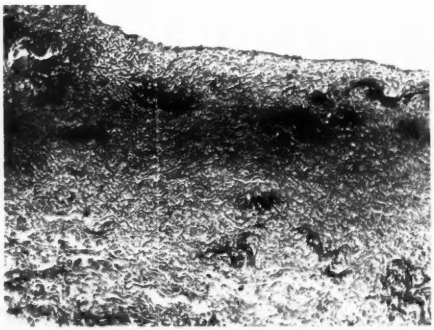

FIG. 5.

Photomicrograph of main branch of pulmonary artery, showing area of medial calcification. X 100.

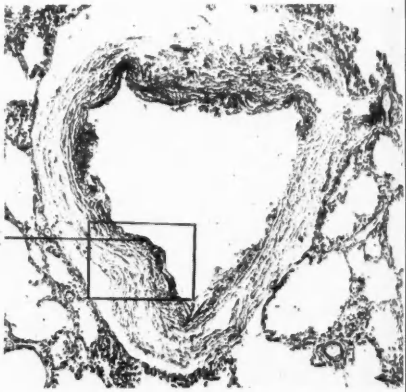

FIG. 6.

Photomicrograph of a small artery in the lung, showing sub-intimal calcification (X). X 75.

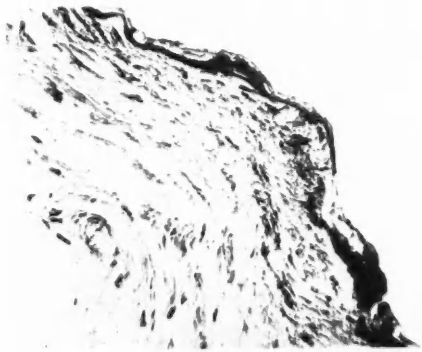

FIG. 7.

Higher power view of the section marked in the preceding photograph. X 300.

in the lung.
X 75.

influence. It is unfortunate that the other visceral and peripheral arteries were not available for examination; but the change, though varying in intensity in the different organs and affecting the coronary circulation most severely, would appear to be generalized. From the degree of calcification which has taken place in the coronary arteries, one is forced to conclude that the process commenced during intra-uterine life. What was the cause it is obviously impossible to say. Were the young arteries exposed to, and damaged by, some circulating toxin, to which the more mature maternal arteries were immune, when the mother was ill with "influenza"? It is interesting to note that, except in the foci of maximum intensity, the medial and intimal changes do not coincide. The thoracic aorta, which shows intimal thickening, presents a normal media, while the pulmonary artery with scattered areas of medial calcification shows no intimal change. The two changes, which are, presumably, due to the same ætiological factor, thus develop quite independently, and cannot be considered in any way compensatory to each other. The only cases at all similar to this that we have been able to find in the literature are those described by Branson and McMichael respectively. Branson's case[1] was that of a child in whom all the smaller arteries and arterioles were the seat of a "proliferating arteritis." The possibility of syphilis was not definitely excluded, although Branson did not consider it likely. McMichael[2] describes the case of a child aged 18 months who died fairly suddenly after a prolonged indefinite febrile illness. The smaller arteries (the size of the coronaries and their main branches) showed "great connective tissue proliferation internal to the internal elastic lamina." The media, adventitia and the vasa vasorum were normal, and the smaller

arterioles were unaffected. There was no evidence of syphilis or tuberculosis. In our case, too, the family history and the mother's Wassermann reaction rule out syphilis fairly definitely as a cause, but it differs from McMichael's case in the involvement of the media.

In conclusion, our thanks are due to Dr. A. L. Taylor for performing a Wassermann reaction on the mother's blood, and for much other help and advice.

REFERENCES.

[1] Branson, *Tr. Path. Soc.*, London, 1905, lv., 212.
[2] McMichael, *Arch. Dis. Child*, 1929, iv., 22, 165.

Reviews of Books

Ker's Infectious Diseases. By C. RUNDLE, M.D., M.R.C.S., L.R.C.P., D.P.H. Third edition. Pp. xii., 614. 32 illustrations. London: Oxford University Press. 1929. Price 30s.—This edition has been brought thoroughly up to date by Dr. Claude Rundle, and in some parts has been entirely re-written. There is so much new matter in the book that the chapter on Relapsing Fever has been omitted. Much recent work on the ætiology of infecticus diseases has been added, and the different methods of treatment are admirably and clearly set forth. The illustrations are very numerous and particularly good. It is a work which can be very confidently recommended both to students and practitioners.

Contributions to Psychiatry, Neurology and Sociology. (The Mott Memorial.) Edited by J. R. LORD, M.D., F.R.C.P.E. Pp. xiv., 401. Illustrated. London: H. K. Lewis & Co. Ltd. 1929. Price 21s. This is a compilation of a large number of contributors, most of whom are either distinguished psychiatrists or neurologists. The appeal of the book will, however, be chiefly to those interested in psychiatry. There is naturally a tendency for the various writers to choose subjects which had a special appeal to Sir Frederick Mott. This is particularly noticeable in a closely-reasoned article by Mapother in his plea for accuracy in assessment of alcoholic morbidity. The chapter on the prevention and early treatment of mental disorders by Sir Hubert Bond gives prominence to the urgent need for alteration in our Lunacy Laws, while Dr. Helen Boyle's contribution on the early treatment of border-line patients is a welcome supplement to the subject. On the scientific side Winkler contributes a most interesting article on the physiology of the mammalian cerebellum and Elliot Smith has an excellent chapter on the anatomy of the visual cortex in man. Bernard Hart writes a helpful chapter on the ætiology of alcoholism. Readers who are interested in psychological studies of dramatists will find a fascinating contribution by Jelliffe on Ibsen, whom he terms "the apostle of the psychopath." A chapter which deserves special mention is that by Geary, which gives, perhaps, the best account that we have so far on the histopathology of general paralysis treated by malaria. Throughout the book all the articles are so good, that it is, perhaps, invidious to single out any chapters for special notice.

Alcohol and Human Life. By C. C. WEEKS, M.R.C.S. Pp. xii., 201. London: H. K. Lewis & Co. Ltd. 1929. Price 3s. 6d.—Dr. Courtenay C. Weeks is to be congratulated on the successful way in which he has revised and re-edited Horsley and Sturge's well-known text-book. During recent years there has been a lull in the teaching of the facts about alcohol and its effects on the individual and on the national life, but with an annual drink bill of £298,000,000 there is much yet to be done. This monograph will prove an invaluable work of reference to temperance teachers, and particularly should be in the hands of all such as have the training of medical students and nurses. The subject is treated in a broad and fair spirit, and although replete with statistics, the book is eminently readable. As Sir Thomas Barlow says in the foreword, "It will repay careful perusal and frequent reference."

Some Principles of Minor Surgery. By V. Z. COPE, M.S., M.D., F.R.C.S. Pp. xii., 159. 82 illustrations. London: Oxford University Press. 1929. Price 10s. 6d.—This book has broken away from the traditional ones on minor surgery. The author has not hesitated to throw overboard oft-repeated but out-of-date methods of treatment. He has placed his principles first, and from them worked out his line of treatment. This makes very interesting and refreshing reading. On antiseptics the author has a good word for only two, namely flavine and eusol. The Carrel-Dakin method of using the latter is carefully described. The treatment of inflammation and acute abscess is fully dealt with, the diagrams being clear and easy to follow. A special chapter is devoted to the important subject of infections of the hand, and here Kanavel's teaching is closely followed. In the chapter on sprains the modern ideas on tennis elbow are stated, but the author does not give his personal views. The article on ambulatory fractures is excellent, but we are surprised to read that the abduction splint for fractures of the upper end of the humerus is unnecessary. In the treatment of Colles's fracture the author describes his modification of Carr's splint. It is made of pliable metal, and allows the wrist to be put up in either flexion or extension; it is also reversible and can be used for either hand. The extremely important subject from the practitioner's point of view of acute retention is dealt with in a practical manner, the illustrations here again being a great help. The final chapter deals with minor operations, including the injection of piles and varicose veins. We can strongly recommend this book to the general practitioner for its clear conception and modern views of the principles and treatment of minor surgery.

On Prescribing Physical Treatment. By M. B. RAY, D.S.O., M.D. Pp. x., 179. Illustrated. London: William Heinemann Ltd. 1929. Price 10s. 6d.—The preface states that "this book is written entirely from the standpoint of the prescriber," and that "physical treatment implies utilization of all kinds of heat and cold, all electrical currents, all forms of radiant energy, such as radium, X-rays, ultra-violet rays, visible rays of the sun, manipulations, exercises, etc." Yet no further mention is made of radium, X-rays, exercises or manipulations (except under douches). About half the book is on hydrotherapy and thermotherapy, six pages on massotherapy, the rest on electrotherapy and actinotherapy; climatotherapy is hardly mentioned. Still there is a large amount of information condensed into the small space, and most of it is comprehensive and accurate, though there are one or two slips, such as, on page 34, Nauheim baths "beginning at fifteen minutes"; artificial brine baths made with only 6 lb. to 40 gallons of water (p. 35); Turkish baths cause no rise in body temperature (p. 67) although radiant heat does (p. 73); "hyperæmia more pronounced at anode" (p. 104), though the "positive pole acts as vaso-constrictor" (p. 106); the bath used for electric water baths should *not* be in "excellent contact with earth," as stated on pp. 125 and 128. The usefulness of the book would have been enhanced if such treatments as Aix and Vichy douches, Turkish and general radiant heat baths, ionization and diathermy and so on had been compared and contrasted more fully; also the combining of treatments, as radiant heat and ionic medication, Turkish baths and ultra-violet light, etc. Again, a fuller index of injuries and diseases known to benefit by physiotherapy would have been of great assistance to the general practitioner. The book is illustrated by half a dozen well-known photographs from Bath and a few diagrams.

Technique of Gastroscopy. By W. STERNBERG (Berlin). Pp. 18. London: John Bale, Sons and Danielsson Ltd. 1929. Price 3s. 6d.—This little brochure gives almost in tabular form the salient points of the author's technique. Except that he relies on palpation rather than on vision, it is not clear how this differs essentially from routine methods. The English is not uniformly felicitous *e.g.* "I regard the avoidance of the all-narcotics as essentially a thankful procedure for abolishing any danger." Keeping in mind this scorn of anæsthesia, local or general, one wonders whether his observation that "it is easier to perform gastroscopy on women and children than on vigorous men" is because he "considers it is wrong to tie the patient down!"

A Graphic Guide to Elementary Surgery. By TH. NAEGELI (Bonn). Translated by J. SNOWMAN, M.D., M.R.C.P. Pp. viii., 206. Illustrated. London : John Bale, Sons & Danielsson Ltd. 1929. Price 12s. 6d.—We are very pleased to welcome this English edition of Professor Naegeli's book. It consists of a short description of surgical principles, accompanied by many very clear and striking diagrams. For example, in describing the course and treatment of a pulmonary cavity, two diagrams, each including a temperature chart, a sketch of the lung, a measured receptacle for sputum and a microscopic slide of the sputum serve to show the effects of good treatment. It will be an admirable little book for dressers as an introduction to ward work and for nurses. The same principle of numerous diagrammatic illustration might with advantage be adopted for a larger text-book of surgery.

Hemorrhoids. By A. S. MORLEY, F.R.C.S. Fourth Edition. Pp. x., 122. Illustrated. London : Oxford University Press. 1929. Price 6s.—We favourably reviewed the first edition of this well-known book. It contains an excellent description of hemorrhoids and of the principles and technique of their treatment by interstitial injections. With regard to the usual operations for piles, not here described, the author writes : "I am convinced that operation is rarely necessary, and that the condition may be dealt with as satisfactorily and as safely by the method of interstitial injections." This opinion is expressed after an experience of more than 3,000 cases in which injections were used. In an appendix to the present edition the author describes a technique which he considers superior to that used until 1926. No one who uses the injection method in the treatment of hemorrhoids can afford to ignore this book.

The Medical Museum. By S. H. DAUKES, M.D. D.P.H. Pp. 183. Illustrated. London : The Wellcome Foundation Ltd. 1929.—Dr. Daukes has done useful service in compiling this booklet of museum work. It shows how the museum may be used for teaching purposes. Pictures, diagrams and many other accessories are subsidized to illustrate diseases and specimens. To look through the book brings back to one's mind the Dresden Hygiene Exhibition of 1911. As a matter of fact, some of the pictures are copies taken from the Deutsches Hygienisches Museum at Dresden. There is a very useful article on methods of preservation and preparation. We congratulate the author on his meritorious work and express our thanks to the Foundation for its most acceptable publication.

The Treatment of Varicose Veins by Intravenous Injections. By J. P. D. McLATCHIE, M.D. Pp. viii., 52. Illustrated. London: William Heinemann, Ltd. 1928. Price 3s. 6d.—This small book presents a concise yet sufficiently detailed account of the treatment of varicose veins by injecting into them certain substances which cause thrombosis and subsequent obliteration of their lumen. It opens with a few interesting pages on the historical aspect of the remedy, which remind us that the treatment is not new, but was practised some eighty years ago with varying success. The author mentions all the preparations of any importance which have been used for this purpose, and considers in detail all the pros and cons of those of any proved therapeutic value. The dosage, technique, effects, complications, indications and contra-indications for this method of treatment receive their due share of publicity. The book is well worth perusal by any who contemplate the adoption of this method of treatment, and will save much time in searching medical literature for details here given in thirty-nine small pages.

An Inquiry into Post-Operative Tetanus.—A Report to the Scottish Board of Health. By T. J. MACKIE M.D., D.P.H. H.M. Stationery Office. Price 1s.—Professor Mackie was asked to report upon the occurrences of post-operative tetanus and to inquire into the effectiveness of the means employed for the sterilization of catgut. The brochure contains an interesting account of cases of post-operative tetanus and discusses the possibility of contamination by tetanus bacilli. Tetanus bacillus occurs as a commensal organism in the intestinal tract of herbivorous animals, and the sheep's intestine —from which surgical catgut is largely prepared—is therefore to be regarded as a potential source of these organisms. Cleansing and sterilization of the material presents many difficulties for the manufacturer, and Dr. Mackie demonstrates the great differences in bactericidal power of possible disinfecting agents. It appears that hydrogen peroxide and iodine trichloride are among the more effective substances. Further, even for hydrogen peroxide the minimum contact of twelve hours is required, and it is recommended that the ribbons of intestine which are spun into strands ought to undergo further sterilization in iodine for fourteen days. The report emphasizes the necessity for frequent bacteriological tests on batches of catgut used in operative work. For purposes of reference it ought to find a place on every surgeon's shelf.

Cancer and Cancer Research. Manchester: Sherratt and Hughes. 1928. Price 1s. 6d.—During the spring of 1928 a series of articles on Cancer and Cancer Research appeared in the *Liverpool Daily Post and Mercury*. These have been reprinted in a handy form and are well worth perusal. In simple language the layman is told of the requirements and methods of research in cancer problems, of its chemical aspects, and of its microscopy and statistics. There is a short account of the prevention of cancer and the available methods of treatment are summarized. We have nothing but praise for the manner in which the information is presented, and for the editorial summary which reviews all the articles. There are many who will welcome its publication; there are some who will question whether any real benefit follows such an issue. However, human mentality demands that the pendulum swing backwards and forwards, and at the present moment the clamour is for diffuseness rather than concentration. After all, it is only the few who realize that the key to pathological growth lies hidden in the genesis of physiological growth.

Incompatibility in Prescriptions. By THOMAS STEPHENSON, D.Sc. Ph.C. F.R.S. (Edin.), F.C.S. Pp. 61. Edinburgh: *The Prescriber* Offices. 1929. Price 4s. 6d.—It would be all to the good if a copy of this book were in the hands of every newly-qualified medical man, to whom the writing of a compatible prescription is one of the difficulties least anticipated and most frequently encountered when he leaves the hospital. The book deals effectively with the three main divisions of its subject, viz. Chemical Incompatibility, Physical Incompatibility, Therapeutic Incompatibility. A résumé of each group is first given followed by a survey of the leading examples of each. Particular attention is paid in the first group to cases of incompatibility involving explosive reactions. In addition to the more commonly occurring drugs of the B.P. and B.P.C., such modern preparations as Chloramine T. and Mercurochrome are included. The relative functions of prescriber and pharmacist are indicated by the advice to leave the choice of pill excipients, suspending agents, etc., to the pharmacist. The second half of the book consists of a dictionary of incompatibles, the alphabetical arrangement of the drugs described making it easy for the reader rapidly to turn up any particular drug in question. Under each heading are given: Dosage; Solubilities; Incompatibles. The dictionary includes all types of drugs used, *e.g.* acids, alkaloids, alcohols, ethers, organo-metallic compounds, salts, etc.

Chronic Otorrhœa. By A. R. FRIEL, M.D., F.R.C.S.I. Pp. viii., 88. Illustrated. Bristol: John Wright & Sons, Ltd. 1929. Price 6s.—In this small volume the author confines himself to a description of the method of treatment of chronic otorrhœa by zinc ionization. In the first part of the book is given a simplified description of the principles of electrolysis and their method of application in practice. The second part deals with the method of examination and diagnosis, with a special reference to establishing the cause of the chronicity of the aural discharge in individual cases, together with a description of the author's lines of treatment. The remainder outlines the author's scheme of organization of a treatment clinic. In the hands of the author and some of his colleagues the methods laid down appear to have given very excellent results. While the method has its limitations and the results are not markedly superior to older methods of treatment where these can be efficiently carried out, yet in the class of patient dealt with the saving of time effected by the more rapid response to treatment and the less frequent attendances necessary for treatment is an economic factor which is well worthy of wider consideration.

The Medical Annual, 1929. Edited by CAREY F. COOMBS, M.D., F.R.C.P., and A. R. SHORT, M.D., B.S., F.R.C.S. Pp. c., 680. Illustrated. Bristol: John Wright & Sons Ltd. 1929. Price 20s.—The present issue well maintains the reputation of this busy man's encyclopædia. It chronicles the chief scientific advances in surgery, radiology, phototherapy and other specialities as recorded in endless scattered publications. It gives long lists of new drugs, books and instruments and directories of societies and institutions for daily reference, and finally, this issue is remarkable for the many hints on difficult points in the treatment of everyday diseases which its general articles provide. Thus it is pointed out that in obstinate hiccough inhalations of CO_2 will often give relief, that acne rosacea will often yield to HCl given after meals, that the bleeding in hæmophiliac patients may be arrested by a pad soaked in normal blood after washing away the clots, while bleeding in jaundiced patients can be controlled by calcium if parathyroid is given at the same time. A treatment of hæmatemesis by gelatine given *per os* is also detailed. This last, indeed, is not a new remedy, but excellent as it is, it fell out of use from dread of tetanus after it was shown that hypodermic injections of gelatine could convey that disease. Of course, the tetanus poison is inert when given by the mouth,

and it is known that many harmless table jellies contain it, but whether the raw surface of a bleeding ulcer could absorb it is doubtful. By the way, A. R. Short for the same condition recommends an injection of sodium citrate (see p. 199). An article of vital importance to any man who may be summoned before a court of law is that on the care to be taken in making an autopsy, and the omissions and mistakes to be avoided. There have been of late so many unsatisfactory post-mortems recorded in the criminal courts that the warnings in this article are specially opportune.

Infant Feeding and Nutrition. By H. B. GLADSTONE, M.D. Pp. xii., 118. London: William Heinemann Ltd. Price 7s. 6d.—This little book is the result of years of experience in infant welfare clinics. It contains a mass of detail and advice in the various methods of feeding babies; indeed, it seems to have this one fault, that, whereas so many alternative plans are submitted, bewildering the reader in their dietetic diversity, no one choice is primarily advocated for a particular type of case; without doubt a vast ingenuity has been displayed in the treatment of the cases quoted, but no precise guide is provided to enable one to determine which course to pursue. The various proprietary foods are critically examined, and much helpful advice is tendered as to their relative merits. Not only is the work intended for the medical profession, but also for those members of the laity engaged in infantile care: hence the various digressions from scientific phraseology to a style assimilable by nurses and others exercising this difficult branch of pediatrics.

Biological Reversion and Hippocratic Anatomy. By HUBERT HIGGINS, M.R.C.S. Pp. 149. London: H. K. Lewis & Co. Ltd. 1929. Price 7s. 6d.—"When I use a word," Humpty Dumpty said in rather a scornful tone, "it means just what I choose it to mean—neither more nor less." But he at least explained the meanings he compelled his words to bear, and very properly paid them extra for it. The omission of a like precaution, and the apparent total lack of connection between many paragraphs, make this book very difficult reading, and perhaps explain the author's frequent complaints that his articles languish unpublished in the offices of medical journals. As far as can be ascertained—and there is no index—"biological reversion" means massage, an art, we are led to suppose, entirely unknown to "incurious, indifferent colleagues," and the sole way of salvation. A book that must be seen to be believed.

Editorial Notes

Installation of Chancellor, University of Bristol.

THE installation of the Right Hon. Winston Spencer Churchill, P.C., C.H., as Chancellor of the University of Bristol will take place on Friday, 13th December, and it is hoped that he will address the undergraduates on the morning of Saturday, 14th December. The new Chancellor will also formally open Wills Hall, the new residential college for men.

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Wills Hall.

WILLS HALL, which is situated on Durdham Down, at the top of Parry's Lane, has accommodation for 140 students. The full number is now in residence, with Mr. H. Norton Matthews, M.A., in charge as Warden. Mr. Norton Matthews's record as a Master at Clifton College and his many-sided interests augur well for the prosperity and contentment of Wills Hall. When the Charter was first granted in 1909 few of us contemplated the way in which Bristol would develop into a residential University. Then it seemed as though we should be content with a scattered tribe of undergraduates, some lucky in having Bristol homes, others drably facing their studies from such lodgings as their slender purses might secure. Now our horizon has been widened by great halls of residence such as were formerly attainable in Oxford and Cambridge alone.

Bristol Medical School.

WHILST we congratulate ourselves on our progress, and record with satisfaction every new development, it is good to look back at our past occasionally. There will be an opportunity for such a glance backward in a few years, and it is as well to be reminded in time that the year 1933 is the centenary of the foundation of the Bristol Medical School. The *Bristol Gazette* for October 24th, 1833, records its foundation thus: "The Bristol Medical School, Monday, October 14th, 1833. This Institution was opened this morning by Dr. Carrick, who delivered the preliminary address." Dr. Carrick was physician at the Infirmary from 1810 to 1834, and was a man of great ability. He played a considerable part in bringing rival schools of anatomy and surgery into harmonious unity. He also persuaded his Infirmary colleagues to invite the co-operation of the medical staff of the newly-founded General Hospital in forming the Medical School. We may well believe that this task needed all his tact and all that mildness which an Infirmary patient enshrined in doggerel verse:—

> "Dr. Carrick he comes in
> So meek, so mild as anything,
> Saying, 'How are you to-day, my child?
> Your pains with patience you must bear,
> And we will seek for your cure.'"

Carrick had had other distinctions in the same year, for he presided at the first annual meeting of the Provincial Medical and Surgical Association which was held in Bristol in 1833, and this meeting is reckoned as the first annual meeting of the British Medical

Association. So that there are two centenaries due in 1833, that of the Bristol Medical School and that of the first British Medical Association meeting in Bristol.

We might begin to dream and plan again for our successors, and we would dream perhaps of a second Carrick breaking the barriers between the Infirmary and the Hospital for good and all.

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Annual Dinner of the Society.

THE first annual dinner of the Bristol Medico-Chirurgical Society was held at the Berkeley Café, Clifton, on Friday, 18th October, Mr. Ferrier Walters, the President, being in the Chair. Forty members and guests attended and spent a most enjoyable evening. Professor Berry, who has recently vacated the Chair of Anatomy in the University of Melbourne, and come to live in Bristol, proposed the toast of the "Society" in a witty speech, full of interesting information about medical education in Australasia, Canada and the United States. Dr. Ormerod, the immediate Past-President of the Society, in the course of the evening mentioned that not only his father but his grandfather and great-grandfather had practised medicine in Bristol (and most of the audience were aware that Dr. Ormerod has a son, either just qualified or sitting for his final examinations). This dinner, which the Medico-Chirurgical Society has, after fifty-five years' existence, at last established, seems to fill a gap in the social organization of the profession where it was really wanted. It has started well, and promises to be the beginning of a long series of successful and hospitable gatherings.

The Eastman Dental Clinic, London.

MR. L. E. CLAREMONT has been appointed Director of the Eastman Dental Clinic in London, and will shortly be leaving Bristol, to the regret of all his friends and colleagues here. It is, however, an appointment on which he is heartily to be congratulated, and it reflects honour on our Dental School that he has been selected as the chief of this new and important institution.

The building has been provided by the generosity of Mr. George Eastman, an American, the present chairman of Kodak Limited, Rochester, N.Y.

Among many gifts to Rochester this philanthropist built a Dental Clinic some fifteen years ago, designed and equipped for carrying out intensive treatment for children—orthodontia playing a big part. The building contains a tonsil and adenoid department, with an operating theatre and twenty beds. The social service is highly organized and the financial status of the patients carefully considered. Each subscribes something towards the cost of treatment. Mr. Eastman considers that patients who pay something, however small, value what they are getting more than those who are treated free. The staffing of the dental side consists entirely of post-graduates acting in a similar capacity to house surgeons. The anæsthetists and throat surgeons attend on certain days from the Rochester Hospital. Apart from the clinical side, the building contains a public lecture theatre, where elementary instruction is given on dental prophylaxis to expectant and nursing mothers, and also the children.

Another activity is the School of Women Dental

Hygienists. The students receive a six months' course in elementary anatomy and physiology, dental radiology, the cleaning and scaling of teeth, and the examination of teeth and mouths generally. Squads of the qualified hygienists are attached to the clinic with a dental surgeon in charge of each squad. They work systematically through the schools, cleaning, scaling, and examining the teeth every three months. Abnormalities are reported to the dental surgeon in charge of the particular squad concerned, and the child is sent to him at the clinic for the necessary treatment.

This work has proved such a success that Mr. Eastman decided to offer a similar gift to Europe, and through the foresight of Lord Riddell the Royal Free Hospital in London has been privileged to undertake the work. The gift in English currency amounts to £200,000. Lord Riddell, the Chairman of the Royal Free Hospital, and the Treasurer, Sir Albert Levy, have given £50,000 each towards the endowment fund.

The completed building will contain seventy-four dental chairs, sixty-eight of which will be fitted with electrical equipment of the latest design. The surgical side is somewhat larger than in Rochester, provision having been made for an operating theatre and forty-five beds, some of which are intended for plastic jaw surgery. There is a larger up-to-date pathological department. Permission has been given to treat adult patients in London, and the hope has been expressed that a Dental School for women should be inaugurated after the children's clinic has been fully established. With this end in view the architectural design, apart from the public lecture theatre with

a cinematograph, etc., includes a mechanical and prosthetic department, and various other lecture and demonstration rooms.

The foundation-stone was laid by His Royal Highness the Prince of Wales in April, 1929. It is hoped that the official opening of the building will take place in the summer of 1930.

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The Wellcome Museum of Medical Science.

WE are always proud to read of the achievements of men who have studied and worked in Bristol. Those who remember Dr. S. H. Daukes as a House Physician at the Royal Infirmary in 1905 will be pleased to know of his success as Curator of the Wellcome Museum of Medical Science as described in the *British Medical Journal* of October 12th :—

"Dr. S. H. Daukes is one of those fortunate men who have lived to realize a great ambition, made possible by the munificence of Dr. Henry S. Wellcome. As a student Dr. Daukes was impressed with the dullness and deficiencies of most museums attached to medical schools, and conceived a scheme for their regeneration. He had to wait for his opportunity; it came to him first in 1917–18, when he was placed in charge of the Army School of Hygiene at Leeds. He resolved to teach his men objectively; trenches were cut, dug-outs made, latrines erected, incinerators set up, and kitchens built; these became his school of army sanitation. The success of the school was noted by Dr. Andrew Balfour, who perceived that the officer in charge was a born teacher, one who was

brimming over with fresh ideas of a kind which could be put into practice. Dr. Balfour invited Dr. Daukes to become Curator of the Wellcome Museum of Tropical Medicine."

This museum was started in 1914 by Dr. Andrew Balfour, who brought as its nucleus the exhibits he had collected, on behalf of the Sudan Government, for the great Hygiene Museum at Dresden in 1911, and later for the Ghent Exhibition. The aim was to establish a museum on graphic lines illustrating by pictures, charts and specimens the complete story of nearly all the tropical diseases. At first the collection was housed in Henrietta Street, Cavendish Square, with Dr. George Buchanan as Curator until 1919, when Dr. Daukes was appointed to be his successor. The Wellcome Museum is now situated at Endsleigh Court, and is no longer confined to Tropical Diseases. It deals with all branches of Medical Science, and offers to the postgraduate and advanced student a complete account of various diseases by all appeal to the eye.

It is interesting to recall that Mr. L. W. G. Malcolm of the Wellcome Medical History Museum is also connected with Bristol, where he was for some years Dr. Bolton's assistant at the Museum and Art Gallery.

Obituary

CHARLES ALEXANDER MORTON, O.B.E., F.R.C.S.

We regret to report the death of Mr. C. A. Morton, which took place on August 16th during a holiday in Switzerland.

Charles Alexander Morton, known to many generations of students as "Peter," was born in Bristol in 1860, where his father, a surgeon in the H.E.I.C.S., lived after his retirement. He was educated at Clifton, and subsequently at St. Bartholomew's. Mr. Stanford Morton, of ophthalmoscopic fame, who died recently in Clifton, was his half-brother.

His student career was quite distinguished, and many prizes and exhibitions fell to him, including the renowned Brackenbury Medical Scholarship.

After qualifying in 1881 he became House Surgeon at the Stanley Hospital, Liverpool, and then held some house appointments at his own hospital, going on from there to further resident and clinical work at other London hospitals. In 1884 he was appointed House Surgeon at the Cumberland Infirmary, Carlisle.

In 1891, after returning to the city of his birth, he became Registrar to the Bristol General Hospital—he had by then taken his F.R.C.S. Eng.—and, on a vacancy occurring soon after, he was elected Assistant Surgeon.

He retired as Senior Surgeon in 1920. For twenty-five years he was also Surgeon to the Bristol Children's Hospital, and when the amalgamation question was first raised some years ago led the opposition to it.

In the days when it was customary to combine the holding of a hospital appointment with general practice Morton from the first struck out an original line in devoting himself purely to surgery.

In 1897 he became Professor of Surgery in the then University College, continuing his appointment in the new

University that followed it. He resigned this in 1925 on reaching the age limit, and was made an Emeritus Professor.

He was President of the Bristol Medico-Chirurgical Society in 1911. During the war he served in the R.A.M.C. (T.) with the rank of Major, and received the O.B.E. for his work at the Beaufort War Hospital.

In regard to the practical side of surgery, he was a clever and able diagnostician, leaving nothing to chance in his efforts to solve the problems that confronted him. His surgical technique, especially in the preparation of the patient, he pursued with a thoroughness which, though his assistants may often have found it tedious, was prompted by the ideal of doing everything that was possible to ensure the patient's recovery. Both in this and his indifference to fees his splendid altruism at any rate could never be gainsaid.

Morton contributed frequently to medical literature, and his interest in matters of public health and local government drew from him letters on these subjects in the daily press; in fact, only a few weeks before he died *The Times* published a long letter by him relating to some recent alterations in Poor Law administration. He was for some years a member of the Bristol Board of Guardians.

Sometimes he seemed to those amongst whom he lived as rather a lonely figure, but probably the stimulus and inspiration of personal daily contact that comes to most of us from the camaraderie of our common calling he would get rather from the wide open spaces of hills, moorland and sea of which he was so passionately fond.

It has been told that he once said to a friend in a spirit of frankness not usual with him that he hoped when it was to be that he might die amongst the mountains of Switzerland. If this were so he had his wish, for it was amongst their shadows that he passed away. Whatever place his name will come to hold in the annals of his craft it may be difficult to say, but it is certain that the memory of his kindliness and care will be long enshrined in many humble homes.

The Medical Library of the University of Bristol,

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in July, 1929.

October, 1929.

American Laryngological Association (1) ..	1 volume.
College of Physicians of Philadelphia (2) ..	1 ,,
Professor E. Fawcett (3)	1 pamphlet.
Professor E. W. Hey Groves (4)	11 volumes.
Librarian, Armstrong College, Newcastle-on-Tyne (5)	1 pamphlet.
Rockefeller Foundation (6)	1 volume.
Surgeon-General of U.S. Army (7)	3 volumes.
United Fruit Company (8)	1 volume.
University of Otago Medical School (9) ..	1 ,,
University of Toronto (10)	1 ,,

Unbound periodicals have also been received from Professor E. W. Hey Groves.

THE ONE HUNDRED AND TWENTY-NINTH LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Behrend, M.	*Die Vor- und Nachbehandlung bei chirurgischen Eingriffen*	(4)	1929
Burnet, J.	*Diseases of the newborn*		1927
Butler, T. H.	*Illustrated guide to the slit-lamp*		1927
Buzzard, Sir E. F. ..	*Outline of Neurology and its Outlook*	(5)	1929
Cancer and Cancer Research			1928
Catalogue of Lewis's Library to the end of 1927. Part I.			1929
Charleton, R., and others.	*Four Treatises on the Bath Waters* (bound in 1 vol.)		1751–54
Clarke, E.	*Refraction of the Eye*	5th Ed.	1924
Cope, V. Z.	*Treatment of the Acute Abdomen*		1926
Cope, V. Z.	*Some Principles of Minor Surgery*		1929
Culpin, M.	*Medicine; and the Man*		1927
Daukes, S. H.	*The Medical Museum*		1929

Douthwaite, A. H. ..	*Injection Treatment of Varicose Veins* 4th Ed.	(4)	1929
Dufourmental, L. ..	*Chirurgie de l'articulation temporo-maxillaire*	(4)	1929
Freund, E.	*Gelenkerkrankungen*	(4)	1929
Friel, A. R.	*Notes on Chronic Otorrhœa*		1929
Ker, C. B.	*Infectious Diseases* .. .. 3rd Ed.		1929
Kurtzahn, H.	*Kleine Chirurgie*	(4)	1929
Lord, J. R., Ed. ..	*The Mott Memorial*		1929
McLatchie, J. D. P. ..	*Varicose Veins*		1928
Meagher, E. T.	*General Paralysis and its Treatment by Induced Malaria*	(3)	1929
Medical Department of United States Army in the World War. Vols. III., X., XII.		(7)	1929
Naegeli, T.	*Graphic Guide to Elementary Surgery*		1929
Néeris, G. R.	*Le tractus thyréoglosse*	(4)	1929
Ogilvie, W. H.	*Recent Advances in Surgery* .. .. 2nd Ed.	(4)	1929
Oudard, P., and others.	*Le diagnostic dans les affections de la colonne vertébrale*	(4)	1928
Overend, W.	*Radiography of the Chest.* II.		1928
Percival, A. S.	*The Prescribing of Spectacles* .. .. .. 3rd Ed.		1928
Praktische Differentialdiagnose. Hrsg. von G. Honigmann. Bd. IV., Chirurgie		(4)	1928
Ray, M. B.	*On Prescribing Physical Treatment*		1929
Stephenson, T.	*Incompatibility in Prescriptions* .. .. New Ed.		1929
Troup, W. A. ..	*Ultra-Violet Rays in General Practice*		1926
Weeks, C. C.	*Alcohol and Human Life*		1929

TRANSACTIONS, REPORTS, JOURNALS, ETC.

Collected Papers of the Mayo Clinic. Vol. XX., 1928		1928
Methods and Problems of Medical Education. 13th Series	(6)	1929
Modern Technique in Treatment. Vol. IV.	(4)	1928
Proceedings of the University of Otago Medical School. No. 6	(9)	1929
Selected articles, Department of Pediatrics, University of Toronto ..	(10)	1929
Surgical Clinics of North America. June, 1929		1929
Transactions of the American Laryngological Association. Vol. 50 ..	(1)	1928
Transactions of the College of Physicians, Philadelphia	(2)	1929
United Fruit Company, 17th Annual Report	(8)	1928

Local Medical Notes

APPOINTMENTS.

UNIVERSITY OF LONDON.—Mr. L. E. Claremont, M.R.C.S., L.R.C.P., L.D.S., has been appointed Director of the Eastman Clinic, Royal Free Hospital, London.

UNIVERSITY OF SINGAPORE.—Mr. E. K. Tratman, B.D.S., L.D.S., has been appointed Professor of Dental Surgery and Director of Dental Studies.

ROYAL COLLEGE OF PHYSICIANS, LONDON.—Dr. Carey F. Coombs has been appointed Lumleian Lecturer for 1930.

UNIVERSITY OF WALES.—Robert Victor Cooke, M.B., Ch.B. Bristol, F.R.C.S. Eng., has been appointed Junior Assistant to the Surgical Unit of the National School of Medicine, Cardiff.

EXAMINATION RESULTS.

Students of the University of Bristol have recently passed the following examinations:—

UNIVERSITY OF LONDON. — M.B., B.S.—K. H. Pridie. *Group I. only*, L. E. Vine. *Second Examination* (*Part I.*), H. F. M. Finzel. (*Part II.*), A. L. Eyre-Brook.

R.C.S. ENG., *Primary* F.R.C.S.—D. L. Eyre-Brook. L.D.S., R.C.S.—*Pass:* R. G. Boodle. *Final Examination* (*Part I.*). *Pass:* Q. A. Davies, M. E. Minton, A. H. V. Williams.

R.C.P. LONDON and R.C.S. ENGLAND.—*Diploma in Tropical Medicine and Hygiene*, A. H. Lowther, M.B., Ch.B. (Bristol).

CONJOINT BOARD.—M.R.C.S., L.R.C.P.—*Pass: In Anatomy*, W. R. Cambridge. *In Physiology*, J. F. H. Eagles. *In Pharmacology and Materia Medica*, J. L. S. James, W. E. Thomas. *In Medicine*, *C. E. Brierley, *N. D. Gerrish, *J. J. J. Giraldi, N. L. Price. *In Surgery*, *J. J. J. Giraldi, N. L. Price, L. H. Wharton, J. E. Newton, *R. G. Mayer, *W. H. B. Spoor, R. M. Ealand. *In Midwifery*, *J. J. J. Giraldi, C. H. Pauli, R. Margaret Hickman, J. E. Newton, W. E. Thomas.

L.S.A.—*In Surgery*, T. M. White. *In Surgery and Medicine*, N. H. Kettlewell (granted diploma).

* Qualified.

LONG FOX MEMORIAL LECTURE.

The Long Fox Memorial Lecture was delivered by Mr. A. Rendle Short, B.Sc., M.D., F.R.C.S., in the Physiological Lecture Theatre of the University of Bristol on Tuesday, October 22nd, 1929. Subject: "Ten Years' Progress in Surgical Treatment."